The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 88, NO. 3 CHICAGO, ILLINOIS JANUARY 15, 1927

FUNCTIONAL STUDIES THROUGHOUT THE COURSE OF ROENTGEN-RAY NEPHRITIS IN DOGS *

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DETROIT

Since 1900 the trend in the study of nephritis has been toward the functional side, and much work has been done through animal experimentation. The functional studies of the acute lesions produced in animals have been productive in advancing our knowledge, and the acute lesions resemble, both pathologically and functionally, the acute lesions in man. With chronic nephritis the difficulties have been greater. Chronic lesions have been produced which are similar in some respects to chronic interstitial nephritis in man, particularly by Christian, Smith and Walker,[1] who used rabbits as the experimental animal and uranium nitrate and potassium bichromate as the nephrotoxic substances. Although the etiology of chronic nephritis is still unsettled, it is certain that such substances are rarely concerned. Possibly because we are unable to employ the etiologic factors that produce chronic nephritis in man, it has been impossible up to the present time to produce chronic nephritis in animals readily and consistently, especially lesions that have not only like pathologic anatomy but also associated vascular, cardiac and eye changes, anemia, acidosis and uremia.

A chronic, experimental, renal lesion involving all structures was produced in rabbits by Schulz and Hoffmann [2] in 1905. Their technic was described in detail in our first communication,[3] read before the American Society for Experimental Pathology in December, 1925. In brief, their procedure involves the surgical mobilization of the kidney through the body wall and direct application of the roentgen ray. In our communication a technic for the production of a similar anatomic lesion in dogs was described and may be thus summarized: Healthy young dogs were obtained and the kidney function observed as to the presence of albumin or casts in the urine, the water balance, chemical reaction of the blood, and phenolsulphonphthalein excretion. The animals obtained after this process of elimination were divided into two groups. In the first, both kidneys were irradiated through the skin and body wall, the costovertebral angle being used as the approximate center of an area from 10 to 15 cm. square. In the second group of animals one kidney was removed surgically for histologic examination, the function of the remaining one determined normal, and then it was irradiated. Approximately half the animals in each group were given a single massive dose, while others received their irradiation in repeated smaller doses.

The dog was selected for this group of experiments because it is less notorious as an animal in which spontaneous nephritis occurs (one out of each four animals in our series), because it has not been used for production of renal lesions with the roentgen ray, and because it is only in animals of this size or larger that all types of functional studies can repeatedly and successfully be carried out over such a long period.

The twenty-six animals used were observed for a period ranging from four days to thirteen months. Pathologic changes involve all the renal structures, and in order of severity are tubular, interstitial, vascular and glomerular (figs. 1 to 9). In addition, as brought out in our first communication, the composite picture produced satisfies the requirements of a chronic nephritis simulating the disease occurring in man, since hypertension, cardiac hypertrophy, macular changes, acidosis, convulsions and coma were observed. In those animals living two months or more death has usually been due to renal insufficiency.

OBJECT OF PRESENT STUDY

Functional studies have been carried out on all the animals throughout the course of the disease. Our objective has been primarily to determine the functional changes in this renal lesion of known etiology, of relatively uniform pathologic anatomy, and which for the most part at least is confined to the kidney or secondary to the kidney insufficiency. Secondarily, the usual tests were compared with an attempt at their evaluation during the course of the disease. Further, a combination test was employed consisting of sodium iodide, sodium thiosulphate and phenolsulphonphthalein. For convenience, the course of the disease has been arbitrarily divided into acute, subacute and chronic stages. Depending on whether the animal received a single massive irradiation or repeated smaller exposures, the length and sharpness of these stages vary.

FUNCTIONAL STUDIES

In the acute stage of the lesion, that is, within a seven day period of the irradiation, the urine of the animals remains of high color; the specific gravity is unaltered, averaging 1.025; the albumin ranges from 10 to 80 mg. per hundred cubic centimeters; red blood corpuscles and

* From the Departments of Pathology and Roentgenology, Henry Ford Hospital.

* Read before the Section on Pathology and Physiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Christian, H. A.; Smith, R. M., and Walker, I. C.: Experimental Cardiorenal Disease, Arch. Int. Med. **8**: 468 (Oct.) 1911.

2. Schulz, O. E., and Hoffmann, R. S.: Deutsche Ztschr. f. Chir. **79**: 350, 1905.

3. Hartman, F. W.; Bolliger, Adolph; and Doub, H. P.: Am. J. M. Sc., to be published.

moderate to numerous coarsely granular and hyaline casts are found along with many cylindroids. The urine output remains the same as before treatment. The phenolsulphonphthalein excretion is increased from 5 to 10 per cent over the established normal. The sodium thiosulphate excretion is unchanged. The iodine excretion is increased from 50 to 100 per cent. The nonprotein nitrogen content of the blood is unaltered except in the terminal stages. The Addis index remains normal. The inorganic phosphates of the plasma show an initial decrease with a later slight increase. The blood sugar rises, with a secondary fall on the third day. The calcium content of the plasma is slightly decreased. The p_H of the blood is increased and the urine often has a strongly alkaline reaction.

In the subacute stages of the disease the urine becomes almost colorless and the specific gravity falls to 1.010 or 1.005. The output is huge as compared to the normal, and a dog weighing 17 Kg. may put out as much as 4,500 cc. of urine in twenty-four hours. Albumin may or may not be present in the urine but often shows marked fluctuation with as much as 6 Gm. in twenty-four hours. Casts are rare, but when seen

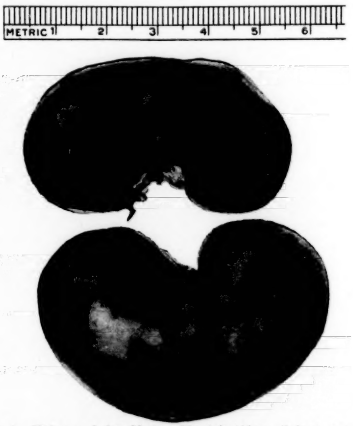

Fig. 1.—Kidneys of dog M 18: The left kidney (below) was surgically removed and weighed 40 Gm. Following the operation, the kidney function was normal. The right kidney (above) was irradiated through the body wall on four occasions, receiving approximately three human erythema doses each time. Two months later the animal showed a phenolsulphonphthalein excretion of 8 per cent; urea nitrogen, 225 mg. per hundred cubic centimeters of blood; nonprotein nitrogen, 312 mg.; inorganic phosphates, 19.4 mg.; creatinine, 5.7 mg., and carbon dioxide combining power, 13.8 per cent. The animal died in coma. The kidney weighed 20 Gm.

TABLE 1.—*Excretion in a Normal and an Irradiated Animal* *

Injected:	Output in Two Hours: Phenolsulphonphthalein, per Cent	$Na_2S_2O_3$, per Cent	Iodine, Mg.	Date
Normal dog.....	70	51	113	3/24
	70	53	102	4/ 2
Irradiated dog, subacute stage 3 months	48	25	32	3/22
	50	27	32	3/29
	40	17	11	4/ 5

* Combined test: 1 Gm. of sodium thiosulphate, U. S. P.; 1 Gm. of sodium iodide, U. S. P., and 6 mg. of phenolsulphonphthalein.

TABLE 2.—*Observations Illustrating How Low the Carbon Dioxide Combining Power of the Blood and How High the Urea Nitrogen May Go*

Dog S 21

	Inorganic Phosphorus	Carbon Dioxide	Creatinine	Urea	
11/13	6.0	36	1.1	12	Age 4 months
1/12	...	37	1.1	15	
2/ 7	5.9	32	...	18	
3/ 3	...	..	...	108	
3/ 9	20.1	6	4.0	207	No coma; given sodium bicarbonate
3/10	15.8	11	6.3	306	Died, following night

TABLE 3.—*Comparative Value of the Creatinine of the Blood and Inorganic Phosphates* *

Dog Y 20

	Inorganic Phosphorus	Carbon Dioxide	Creatinine	Urea	Phenolsulphonphthalein
8/ 1	4.9	54	1.3	18	55
8/ 2	4.8	..	...	22	38
9/ 3	6.7	30	2.1	43	17
9/ 8	...	..	3.0	41	15
9/11	6.7	..	3.4	29	12
9/15	8.1	5	Given $NaHCO_3$, insulin and glucose		
9/17	7.9	30	...	70	10
9/19	...	31	5.0	81	..
9/21	14.1	24.5	7.8	137	..
9/22	21.4	..	8.0	164	1

* In this animal, both reached high levels.

TABLE 4.—*Addis Index in Various Animals with Lesions in Various Stages* *

Urea Ratio-Test (Addis)

	Urea Ratio, per Cent	Phenolsulphonphthalein, per Cent	Urea Mg.
Normal dogs, six different animals.....	13-27	60-75	12-16
Nephritic dog N, acute stage.....	18	70	14
Nephritic dog V, subacute chronic stage..	14	30	22.9
Nephritic dog F, subacute chronic stage..	12	48	19.1
Nephritic dog Y, late chronic stage.....	1.8	12	65

* Dog V shows the index in the normal range, while the phenolsulphonphthalein excretion is markedly reduced. Dog Y 20 shows a low index along with low phenolsulphonphthalein output and high urea nitrogen of the blood.

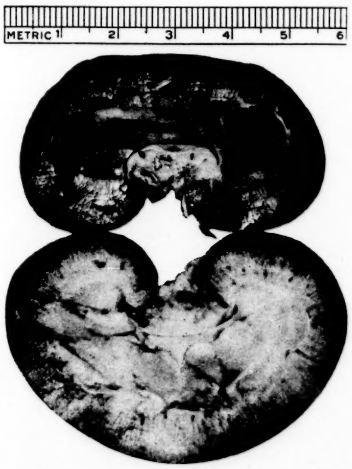

Fig. 2.—Cut surface of kidneys of dog M 18. The irradiated right kidney is shown above. The cortex is much thinner than in the excised kidney and the architecture is indistinct.

are finely granular or hyaline. The reaction of the urine is usually acid. The phenolsulphonphthalein excretion is only slightly depressed, but the thiosulphate excretion is depressed on an average of 10 per cent and the iodine excretion may be either increased or decreased (table 1). The nonprotein nitrogen content of the blood is unchanged or slightly decreased. The inorganic phosphates and calcium of the blood are within normal limits. The blood chlorides are slightly depressed. The carbon dioxide combining power of the blood is within the normal range or slightly decreased (fig. 10).

The chronic stages of the lesion, found in periods of four months or more after the initial irradiation and characterized by almost complete replacement of tubules, marked arteriosclerosis of the blood vessels and hyalinization of the glomeruli, show the urine still almost colorless or at least lighter than normal. The output is increased from one third to one half over the normal

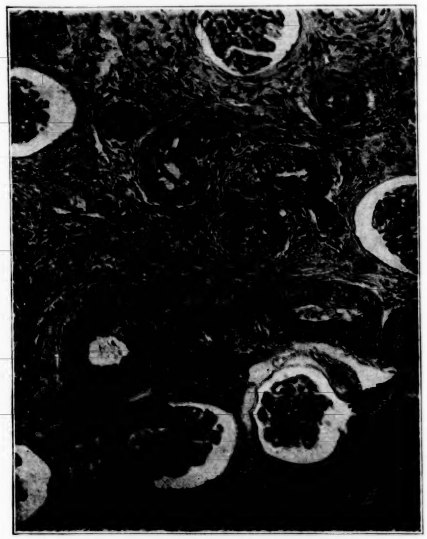

Fig. 3.—Cortex of right kidney of M 18, showing atrophy of glomeruli, thickening of Bowman's capsule, replacement of tubules and sclerotic blood vessels.

TABLE 5.—*Comparative Excretion of Phenolsulphonphthalein, Sodium Iodide and Sodium Thiosulphate in Well Established Lesions* *

	Output in Two Hours			
	Phenolsulphonphthalein, per Cent	$Na_2S_2O_3$, per Cent	Iodine, Mg.	Date
Untreated goat with spontaneous albuminuria	70	30	70	4/ 1
Irradiated goat, chronic stage 2½ months	35	21	0	3/26
Irradiated goat, chronic stage 2½ months	55	26	1	3/26

* Combined test; 1 Gm. of sodium thiosulphate, U. S. P.; 1 Gm. of sodium iodide, U. S. P., and 6 mg. of phenolsulphonphthalein.

TABLE 6.—*Marked Increase Observed in the Inorganic Phosphates of the Blood*

Dog M 18

	Inorganic Phosphorus	Carbon Dioxide	Creatinine	Urea
7/ 7	4.8	38	1.2	18
8/ 7	4.7	36	1.2	17
8/31	...	..	4.6	70
9/ 4	10.2	...	...	127
9/ 6	13.1	14.4	...	175
9/ 7	13.7	14	...	184
9/ 9	19.4	..	5.7	225

TABLE 7.—*Blood Phosphates Only Moderately Increased* *

Dog F 26

	Inorganic Phosphorus	Carbon Dioxide	Creatinine	Calcium	Urea
12/22	4.2	42	1.2	11.2	14
1/11	4.2	40	1.2	....	19.1
1/19	...	..	1.5	....	19.5
2/16	4.4	..	1.7	11.4	15.9
2/26	5.04	43.6	...	....	....
3/24	3.8	50.8	...	....	....
3/29	5.2	....	1.7	....	26.2
4/ 5	9.0	27.5	...	....	84.1
4/ 6	11.2	26.5	3.8	14.2	115.0

* The carbon dioxide combining power, 26.5 per cent and the blood calcium, 14.2 mg. during the terminal stage. There were no convulsions.

TABLE 8.—*Blood Phosphates Moderately Increased* *

Dog G 23

1925	Inorganic Phosphorus	Carbon Dioxide	Calcium	Urea
7/23	4.9	38.3	10.5	14
9/ 9	6.9	41	....	11.6
9/11	5.73	....	....	....
9/17	...	53	....	10.3
9/28	...	38.5	....	11.2
10/ 1	...	51	....	....
10/14	8.6	40.3	....	89.1
10/15	...	37	7.3	98.1
10/16	10.1	38.2 Muscular twitchings	6.5	168

* The carbon dioxide combining power normal but the blood calcium 6.5 mg. The animal died in coma accompanied by convulsions.

Fig. 4.—Medulla of right kidney of M 18, showing distorted dilated tubules containing casts and marked increase of interstitial tissue.

until the terminal stage, when oliguria or anuria may ensue. Albumin may or may not be present, but, when present, as much as 8 Gm. per liter is found. Casts are rare, but those of hyaline type predominate. Blood is often present, sometimes constantly and in large amounts. The reaction is almost invariably acid. The nonprotein nitrogen of the blood may reach levels as high as 400 mg. per hundred cubic centimeters, urea nitrogen as high as 300 mg. (table 2), and creatinine as high as 8 mg. (table 3); uric acid showed no increase. The Addis index was variable and showed figures as low as 1.8 (table 4). The phenolsulphonphthalein was markedly depressed in the chronic stage, being usually below 30 per cent and often falling to 0 during the terminal stage. The sodium thiosulphate was markedly depressed, falling as low as 1 or 2 per cent, and the iodine excretion may be depressed to 0 (table 5). The inorganic phosphates gradually mounted during this period, reaching levels as high as 19.5 mg. per hundred cubic centimeters (table 6). Calcium values were increased (table 7), normal or depressed (table 8), falling to 7 mg. per hundred cubic centimeters in four animals which had muscular twitching and convulsions. Coincident with the higher elevations of the inorganic phosphates of the blood, the carbon dioxide combining power was depressed, ranging from 6 to 13 per cent (fig. 13, table 6).

Fig. 5.—Kidneys of Y 20 after being irradiated nine times through the body wall, receiving approximately one and one-half human erythema doses over each kidney each time. The left kidney at the bottom contains many small abscesses and the pelvis is dilated and filled with purulent material. The right weighs 26 Gm. and the cortical surface is firm, glossy and dotted with small gray areas.

METHODS

The urine examination was done by the usual routine method. Exton's [4] albuminometer, both rapid and accurate, was used in estimating the albumin content. Determinations of the blood components, nonprotein nitrogen, urea nitrogen, sugar, creatinine and amino-acids were done by the methods of Folin and Wu.[5] Benedict's [6] recent procedure was employed for inorganic phosphates of the blood, and Clark's [7] method for calcium. The carbon dioxide combining power of the plasma was determined by Van Slyke's [8] method; the urea ratio, as suggested by Addis,[9] and the phenolsulphonphthalein test, as outlined by Rowntree and Geraghty.[10] In the latter test the dye was administered intravenously. The excretion of sodium thiosulphate and sodium iodide, as suggested by Nyiri,[11] was estimated in about fifty cases.

To reduce the total number of procedures and to cover the varying function, as seen in the different stages of the lesions, we added phenolsulphonphthalein to the sodium thiosulphate and sodium iodide, giving all three substances intravenously in a single dose and determining the amount excreted in a two hour urine specimen. The evaluation of this combined test will be given elsewhere. The technic is, briefly, as follows: The bladder is emptied, and 10 cc. of a solution containing 1 Gm. of crystalline sodium thiosulphate, 1 Gm. of crystalline sodium iodide and 6 mg. of phenolsulphonphthalein is injected intravenously. After two hours a urine specimen is obtained by catheter. The three substances, as excreted in the urine, are determined separately—the phenolsulphonphthalein as suggested by Rowntree and Geraghty, the sodium thiosulphate by titration and the sodium iodide colorimetrically, against standard tubes of iodine dissolved in carbon tetrachloride.

COMMENT

The acute nephritis produced by the roentgen ray is comparable functionally with acute clinical nephritis or that produced by heavy metals only in the presence of albumin and casts. Nitrogen retention does not occur except as the animal becomes moribund after a lethal irradiation, and the urea ratio is normal.

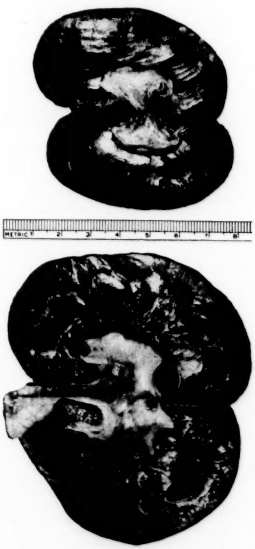

Fig. 6.—Cut surfaces of kidneys of Y 20. The thin cortex and firm, fibrous, medullary tissue is seen.

The phenolsulphonphthalein excretion as immediately affected by the roentgen ray was reported in an earlier communication.[12] Animals were vitally stained with the dye. Staining disappeared more rapidly in the irradiated animal. Observations made in this series confirm the earlier work, as the phenolsulphonphthalein excretion is increased for a time after exposure whether the kidney is normal to begin with or badly injured. The thiosulphate excretion is normal, but the iodine excretion is accelerated from 50 to 100 per cent.

4. Exton, W. G.: J. Lab. & Clin. Med. **10**: 722 (June) 1925.
5. Folin, Otto: Laboratory Manual of Biological Chemistry, ed. 3, New York, 1922, pp. 229-291.
6. Benedict, S. R., and Theiss, R. C.: J. Biol. Chem. **61**: 63 (Aug.) 1924.
7. Clark, G. W.: J. Biol. Chem. **49**: 487 (Dec.) 1921.
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9. Addis, Thomas: Renal Function and Amount of Functioning Tissue, Arch. Int. Med. **30**: 378 (Sept.) 1922.
10. Rowntree, L. G., and Geraghty, J. T.: J. Pharmacol. & Exper. Therap. **1**: 578, 1910.
11. Nyiri, W.: Wien. Arch. f. inn. Med. **9**: 511 (March) 1925.
12. Doub, H. P.; Bolliger, Adolph; and Hartman, F. W: Immediate Metabolic Disturbances Following Deep Roentgen-Ray Therapy, J. A. M. A. **85**: 1299 (Oct.) 1925.

Beyond the acute stage, the functional changes resemble kidney insufficiency in man. The albumin is variable and unreliable, being present in large quantities when there is no nitrogen retention and when dye excretion is normal. On the other hand, late in the disease the urine may be free from albumin and casts, while all other tests indicate severe kidney insufficiency.

The urea nitrogen of the blood was elevated in the chronic lesions and was often observed before a definite reduction in dye excretion. Much significance has been attached to the blood creatinine level in prognosis, especially by Myers.[13] In this experimental lesion its importance was overshadowed by the inorganic blood phosphates in most instances.

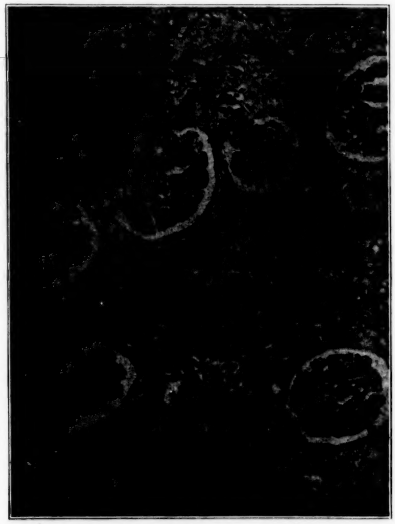

Fig. 7.—Cortical portion of right kidney of Y 20, showing replacement of tubules, atrophy and hyalinization of the glomeruli.

Addis has emphasized the urea ratio, and it was applied in all stages of our work. In the acute and subacute stages it lies within the normal range. Later stages still showed the ratio within the lower limits of normal, while the phenolsulphonphthalein was depressed from 20 to 40 per cent. In the terminal stages the index was invariably low. With the lesion studied, the urea ratio is of value but of less significance than dye excretion.

In this series of experiments the phenolsulphonphthalein test of Rowntree and Geraghty has given the most consistent results as a gage of function in the later stages. After the acute stage the excretion of the dye is gradually depressed and has not, with the technic described, shown variations of more than 8 per cent, although an inherent error of 10 per cent is suggested by careful observers. As correlated with the histologic picture, the phenolsulphonphthalein curve represents the progressive lesion. When complications as suppurative nephritis arise, overcoming the reserve of the already injured kidney, the dye excretion drops rapidly often to zero, indicating as clearly as the creatinine and inorganic blood phosphates the terminal stage.

Fig. 8.—Cortical portion of right kidney of Y 20, showing hyalinization of glomeruli and distortion of tubules.

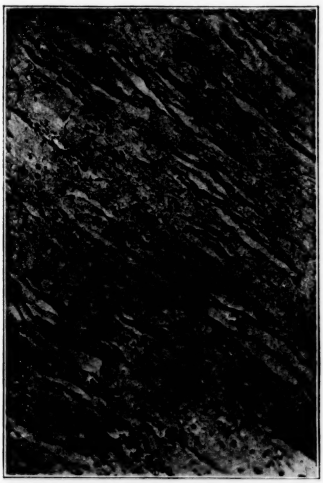

Fig. 9.—Medulla of right kidney of Y 20, showing atrophy of tubules and increase of interstitial tissue.

In the combined or triple test as outlined, all the information obtained from the phenolsulphonphthalein is retained and the same venipuncture and urine collection

13. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.

gives two additional possibilities (fig. 12). When three tests are obtained with the same effort on the part of patient and physician they are helpful, one checking the other. In this case there is the added advantage of the sodium thiosulphate being definitely depressed at an earlier stage.

The work thus far justifies the preference expressed above for the inorganic blood phosphates as a prognostic sign. They rise only slightly during the course of the disease, even when there is marked nitrogen retention and low phenolsulphonphthalein output. A sudden rise is associated with a marked acidosis or with the terminal stage. The association of high blood phosphates with severe acidosis has been invariable, but high phosphates have also been observed without acidosis, and there is no direct relation between the height of the phosphate level and the severity of the acidosis.

In association with the terminal uremia, four animals had muscular twitchings and convulsions and showed

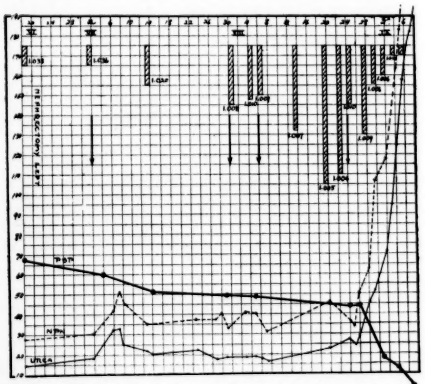

Fig. 10 (M 18).—Specific gravity and output of urine, phenolsulphonphthalein excretion, nonprotein nitrogen and urea nitrogen of the blood. The arrows indicate irradiations.

a depression of blood calcium down to 6 mg. per hundred cubic centimeters (fig. 13). Calcium administration in these cases relieved the convulsive movements. In three other cases the serum calcium was elevated to 14 mg. per hundred cubic centimeters during the terminal stage, and in these the coma was unassociated with convulsions (fig. 14).

CONCLUSIONS

1. The renal insufficiency produced by deep irradiation resembles chronic interstitial nephritis in man, allowing an experimental approach as well as correlation of functional and pathologic studies.

2. No single functional test thus far developed is reliable to denote the extent of kidney injury throughout the course of the progressive lesion.

ABSTRACT OF DISCUSSION

DR. NORMAN M. KEITH, Rochester, Minn.: Dr. Hartman and his associates have carried out a very fine piece of work. The progression of the renal lesion from the point of view both of histology and of functional studies is most convincing. An important point to all of us who are interested in the production of renal disease in the experimental animal is the question of hypertension. The etiology of this experimental condition that Dr. Hartman has produced is not bacterial. We have heard a great deal about the question of bacterial origin of glomerular nephritis. Some workers go so far as to state that it must be due to the streptococcus. In the present experiments we have a chronic nephritis. Glomerular involvement is not as marked as tubular, but there is also vascular involvement. Whether chemical toxic substances might be absorbed from

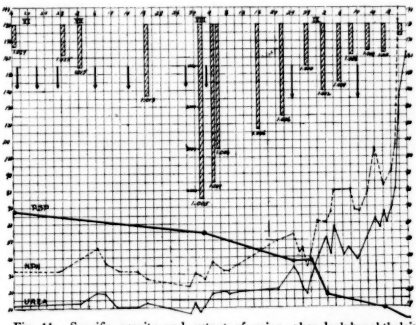

Fig. 11.—Specific gravity and output of urine, phenolsulphonphthalein excretion, nonprotein nitrogen and urea nitrogen of the blood; irradiations indicated by arrows. Twenty-four hours before death, the nonprotein nitrogen of the blood was 208 mg.; urea nitrogen, 164 mg.; inorganic phosphates, 21.4 mg.; chlorides, 430 mg.; creatinine, 8 mg., and phenolsulphonphthalein excretion 1 per cent in two hours.

the site of action of the roentgen ray and thus injure the kidney might be considered. I do not think this is probable. Finally, I think it is important to point out that Dr. Hartman has shown in certain animals a progressive renal lesion leading to chronicity with a rise in systolic blood pressure. If this fact is corroborated by further work, it opens up an important field for further investigation. Thus it seems that chronic nephritis and possible chronic hypertension have been added by Dr. Hartman and his associates to those diseases that can be reproduced in the experimental animal.

DR. J. W. SHERRILL, La Jolla, Calif.: The work of Dr. Hartman and his associates adds valuable information to our knowledge of renal pathology. Attempts to reproduce disease experimentally in the dog give us a more satisfactory basis for the understanding of the disease from a clinical standpoint. Apparently the lesion produced by the roentgen ray is a profound one, involving more than 75 per cent of the functioning renal tissue. We have been able to remove 75 per cent of the renal tissue in the normal dog by surgical means without producing nephritis or the common changes as seen in nephritis, such as retinitis, hypertension or impaired phenolsulphonphthalein excretion. Albuminuria and retention of waste products are usually not in evidence until very late, following the removal of large portions of kidney tissue. The roentgen ray seems to produce not only renal injury, with consequent renal atrophy, but also marked vascular injury and generalized tissue degeneration, which later results in hypertension, retinitis, persistent low phenolsulphonphthalein excretion and retention of nitrogenous waste products. Albuminuria

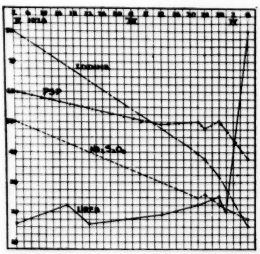

Fig. 12.—Curves of combination test and urea.

and casts are rather inconstant. We have found the auscultatory method for making blood pressure readings in the dog very satisfactory. The pathologic renal lesions produced by the roentgen ray are not identical with nephritic lesions as seen in man. The work seems to support the former tendency to consider nephritis as a result of renal insufficiency, rather than the present conception of an impaired constitutional state in which all tissues of the body are involved.

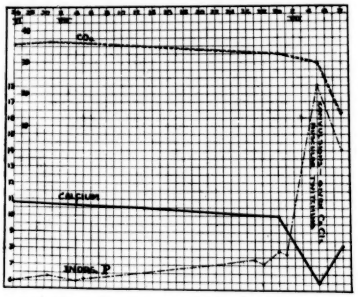

Fig. 13.—Curves showing high inorganic phosphates and low calcium associated with convulsions.

DR. V. C. MYERS, Iowa City: It seems to me that the analogy between the condition which Dr. Hartman and his associates has produced in dogs with the roentgen ray and chronic interstitial nephritis in the human subject is particularly striking. The rise in the blood urea, creatinine and inorganic phosphorus and the fall in the phenolsulphonphthalein output

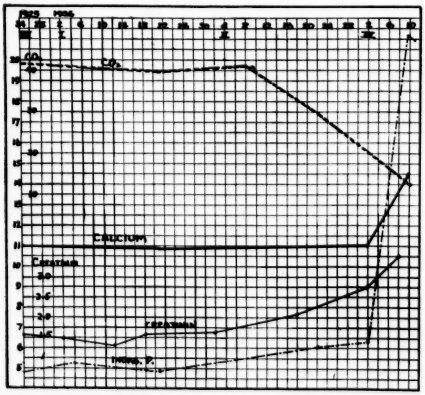

Fig. 14.—High inorganic phosphates and high calcium during terminal coma unassociated with convulsions.

are almost identically like those we find during the progress of human chronic interstitial nephritis. Dr. Hartman published a paper some months ago on alkalosis following roentgen-ray treatment. I wonder whether he has made further observations on the sire in the p_H following use of the roentgen ray.

DR. F. W. HARTMAN, Detroit: Regarding the blood pressure changes mentioned by Dr. Keith, there is a consistent elevation of the systolic pressure from 120 to 130 up to as high as 200 and 230, these changes being taken for the most part by the auscultation method of Allen and checked in some instances on a loop of the carotid artery. The dilatation and hypertrophy of the heart observed in several of the animals tends to support the blood pressure observations. We cannot deny the possibility of tissue changes outside the kidney mentioned by Dr. Sherrill, and we have emphasized the changes in the intestine particularly. However, we feel that the proportion of the capillary bed reached through the small windows described would be insufficient alone to explain the blood pressure findings. The fact that tissue injury outside the kidney is reduced to a minimum is supported by the good state of nutrition observed in most of our animals right up to the terminal stage. In answer to Dr. Myers' question regarding the alkalosis associated with deep irradiation, the p_H of the blood during the acute stage is increased and the urine is strongly alkaline. This alkalosis may persist for a number of weeks. Studies along this line are being continued.

IRRITATION DUE TO INSECT SECRETION *

W. A. HOFFMAN, D.Sc.
NEW YORK

Doubtless since his early beginnings man has been aware of the fact that various arthropods produce substances poisonous to him, on his coming in contact with them. A literature that goes back three centuries indicates that these properties have not been without interest to the scientist and other observers.

Fig. 1. — Portion of ventral surface of Loxa flavicollis enlarged about twelve times. Arrow points to gland.

We can divide irritating insects into three groups:

1. Insects that cause a reaction through the injection of salivary secretion, or some constituent of the alimentary canal, when their mouth parts pierce the integument. Practically all such species suck blood. Among these may be enumerated mosquitoes, gnats, horseflies, bedbugs, fleas and lice.

2. Insects that cause a decided reaction through the introduction of the products of glands situated in the caudal portion of the body. Bees and wasps come in this category.

3. The preceding groups involve mature forms. Tubercles on the dorsal and lateral areas of a number of caterpillars bear a type of hair which, on being brushed against the skin, liberates a poison that frequently gives rise to a dermatitis. In this country and Europe, the larva of the browntail moth is the most notorious offender in this respect.

All cases thus far mentioned deal with glandular products. There are some insects whose blood contains a poisonous principle. This may be exuded through ventral pores. Cantharidin, which is used as a vesicant and aphrodisiac, is derived from the bodies of so-called blister beetles colloquially called Spanish fly, the best known members of this group. In China, extracts of a cicada are also used for vesicating pur-

* From the Haiti Survey of the International Health Board.

poses. Certain South African warriors utilize the blood of a larval chrysomelid (relative of the potato beetle) as an arrow poison. This characteristic, though scarcely noticeable, occurs commonly among lady beetles. Riley and Johannsen[1] give a good summary of the subject up to the time of its publication.

One evening, toward the end of 1924, while I was at Port au Prince, Haiti, a large insect flew beneath my clothing. A burning sensation soon arose. Its cause proved to be a secretion exuded by a member of the family *Pentatomidae* of the order *Heteroptera*. Mr. W. H. McAtee of the Biological Survey identified the species as *Loxa flavicollis*. *Loxa variegata*, a close relative, also occurs in the West Indies. Many members of the order give off a pungent odor, due to a secretion from two glands situated between the second and third pairs of legs. The execrable taste some berries have is due to the deposition of such a substance on them by various bugs.

After the first experience, crude experiments were tried, the occasional specimens of *Loxa* captured at night supplying the material. The ventral surface of the subject was rubbed over the pectoral region. If a plentiful supply of the secretion was available, an oily sensation as it exuded from the glands could be detected. Under such conditions the burning effect tended to occur. The results of these rough tests follow.

Fig. 2.—Dorsal surface of Loxa flavicollis enlarged three times.

1. Two specimens were captured. One rubbed against the left side of the chest caused a vague burning sensation of short duration.

2. A good yield was obtained, resulting in an irritation which lasted approximately a half hour.

3. The burning sensation lasted only a short time. In this instance an erythrodermia set in over an area of approximately 3 square inches.

4. The results were similar to those in the preceding test.

5. On this occasion the insect was kept stationary about thirty seconds. An area of three-fourths inch was involved, though the effect was comparatively slight. A browning of the epidermis caused by the action of secretion persisted for nearly three weeks, in spite of daily baths.

6. Subsequent to an exposure of forty-five seconds, there ensued a sharp burning sensation persisting for one minute, giving way to a somewhat less marked sensation over a period of five minutes. During the succeeding five minutes it gradually passed off.

7. A copious discharge of the secretion for ten seconds over an area of 1 square inch resulted in a slight momentary burning effect, repetitions occurring intermittently during the next five minutes.

These results, while of an academic nature, indicate the possibility of more serious sequelae in the case of other insects or susceptible individuals; and demonstrate, I believe, an apparently new means of irritation by insects.

61 Broadway.

1. Riley, W. A., and Johannsen, O. A.: Handbook of Medical Entomology, Ithaca, N. Y., Comstock Publishing Company, 1915.

LEUKOPLAKIA OF THE BLADDER*

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MEMPHIS, TENN.

Leukoplakia of the urinary organs constitutes an interesting chapter in the subject of urology because of the uncertainty of its development, and the irregularity and rarity of its occurrence. A total of seventy-nine cases has been found in the literature. Except for some of the more recent reports, important details are lacking. With only a meager knowledge of the condition, definite conclusions cannot be drawn concerning the etiology, nor suitable or adequate treatment applied to deal with this intractable lesion. As stated by Kretschmer,[1] the report of such cases will give us a more accurate account of the occurrence of the condition, and new facts may be brought forth to throw light on this interesting paradox. In 1920, Kretschmer reviewed the literature and found forty-three cases of leukoplakia of the bladder. To these he added one case. Two cases reported almost simultaneously by Richey[2] and Marion,[3] and two cases previously reported by Pollack were not included in this review. Of these cases the kidney pelvis was the site of the disease in fourteen. Hinman,[4] Kutzman and Gibson,[5] in 1924, reviewed the literature concerning leukoplakia of the renal pelvis and found thirty-one cases. To these they added two cases, and reported one case in which the bladder was the site of the lesion. Additional cases have been reported by Valentine,[6] the Li Virghis[7] and Wilhelmi.[8]

REPORT OF CASE

History.—A. L., a negro, aged 39, a painter and paper hanger, was referred for examination, Dec. 28, 1923. His chief complaints were: (1) pain and burning on urination; (2) frequency of urination; (3) pain over the bladder and perineum; (4) terminal distress; (5) terminal bleeding; (6) slow and intermittent stream; (7) passing of sand and gravel particles in the urine, and (8) pus in the urine. The family history was irrelevant. The patient admitted repeated attacks of gonorrhea and a penile ulcer eight years before. Though he received no antisyphilitic treatment, he noted no later manifestations of syphilis. The patient stated that he had some degree of bladder trouble for the past seventeen years, but that the condition had become exceedingly severe in the last six months. The pain attending urination, which occurred at intervals of from fifteen to thirty minutes during the day and night, was extreme. The pain over the bladder and perineum was described as a sense of fulness and weight. Marked straining and effort occurred at the end of urination, and was followed by the passage of several drops of blood. The stream was free and forceful at times, but more often slow and intermittent. More recently, sand and particles of gritty material comparing in size with a split pea had been found almost constantly in the urine. A specimen of urine allowed to remain in a receptacle showed a heavy sediment.

* From the Department of Urology, University of Tennessee College of Medicine.

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Kretschmer, H. L.: Leukoplakia of the Bladder and Ureter, Surg. Gynec. Obst. **31**: 225 (Oct.) 1920; Leukoplakia of the Kidney Pelvis, Arch. Surg. **5**: 348-355 (Sept.) 1922; Primary Nonpapillary Carcinoma of the Renal Pelvis, J. Urol. **1**: 405 (Aug.) 1917.

2. Richey, D. G.: Leukoplakia of the Pelvis of the Kidney: A Study in Metaplasia, J. Lab. & Clin. Med. **5**: 635 (July) 1920.

3. Marion, G.: Leukoplakia of the Bladder, J. d'urol. **9**: 257, 1920.

4. Hinman, F., and Gibson, T. E.: Squamous Carcinoma of the Bladder: A Study of Heterotopic Epidermization, and a Review of the Literature and Report of Cases, J. Urol. **6**: 1 (July) 1921.

5. Hinman, F.; Kutzman, A. A., and Gibson, T. E.: Leukoplakia of the Kidney Pelvis, Surg. Gynec. Obst. **39**: 472 (Oct.) 1924.

6. Valentine, J. J.: J. Urol. **10**: 289-293 (Oct.) 1923.

7. Li Virghi, S., and Li Virghi, E.: J. d'urol. **16**: 461-470 (Dec.) 1923.

8. Wilhelmi, O. J.: J. Urol. **14**: 653-659 (Dec.) 1925.

Examination.—The patient was 67 inches (170 cm.) tall, and weighed 162 pounds (73.5 Kg.) The head and neck were normal except for moderate caries in two teeth. The chest was normal in shape, [illegible]ual and uniform in expansion. Marked tenderness was [illegible] over the bladder area. Rectal examination revealed a moderately enlarged prostate, which was tender and firm, but elastic.

The urinalysis showed urine of a dark amber with a specific gravity of 1.030; it had an acid reaction, and contained a trace of albumin. It was negative for sugar. The sediment showed from 8 to 10 red blood cells, from 20 to 25 pus cells, and an abundance of amorphous sediment and bladder epithelium. The sediment stain showed staphylococci and colon bacilli. The phenolsulphonphthalein output was 40 per cent and 15 per cent in two hours.

The blood count was: red blood cells, 4,450,000; white blood cells, 10,400 with 76 per cent neutrophils; hemoglobin, 85 per cent. No malarial parasites were found. The blood Wassermann reaction was negative.

A roentgenologic examination of the kidneys, ureters and bladder showed a large ovoid shadow in the region of the bladder. The cystoscopic examination revealed a large vesical calculus lying free on the bladder floor. The bladder mucosa was intensely injected and swollen, and covered at its base by a grayish necrotic membrane. The ureters were viewed and found in their normal relative positions. The vesical orifice was moderately contracted. Thirty cubic centimeters of residual urine was found.

Operation and Results.—Jan. 2, 1924, a suprapubic vesical lithotomy was done under nitrous oxide and oxygen anesthesia. The outer shell of the calculus, weighing 82 Gm., was broken in its removal. Drainage tubes were placed in the bladder, and the space of Retzius and the bladder were closed in the usual way.

The tube was removed from the bladder on the fourth day, and irrigations continued through an indwelling catheter. Because of a marked intolerance to the indwelling catheter, it was removed. The bladder closed on the fifteenth day, and the patient voided with considerable comfort. Though the patient enjoyed marked relief, he continued to pass urine rich in phosphatic concretions and cellular elements. This condition was not lessened by the constant use of vesical lavages and the administration of urinary antiseptics. Conversely, it eventually seemed to add to his discomfort. March 28, a second cystoscopic examination was made, and the following observations were recorded: Distention of the bladder with more than 100 cc. of filling fluid caused marked discomfort. On the floor and lateral walls of the bladder was seen a grayish white necrotic membrane, which was covered, for the most part, by phosphatic incrustations. The margins of this area were irregular and slightly raised. The surface was wrinkled and uneven. Adjacent parts of the bladder floor showed denuded areas. The remaining portion of the vesical mucosa was red and swollen. Catheters were passed into the renal pelvis without difficulty. No renal retention was found. Phenolsulphonphthalein given intravenously appeared from the right side in seven and one-half minutes, and from the left side in five minutes. A fifteen-minute output showed 5 per cent and 9 per cent, respectively. The urine from the right kidney showed clumps of pus cells and numerous blood cells, while the left kidney urine showed from 10 to 15 pus cells and a few blood cells. The stained sediment and culture showed staphylococci and colon bacilli in both urines. Pyelo-ureterograms showed a moderate inflammatory dilatation of the kidney pelvis and ureters, and a kink of the upper right ureter.

Following the administration of a provocative dose of neo-arsphenamine, the blood Wassermann reaction was reported positive. With the administration of antisyphilitic treatment, vesical and renal lavage, urinary antiseptics, and cystoscopic fulguration, suprapubic drainage was deferred until September, 1924. At this time the bladder was examined, a wedge-shaped piece removed from the vesical orifice, and sections taken for pathologic examination. It was found that the phosphatic concretions had diminished, but that the extent of the leukoplakic areas remained unchanged.

Beginning in September, 1925, the patient suffered repeated attacks of right renal colic, with considerable pain and tenderness in the flank between attacks. Roentgenograms were negative. The ureteral obstruction was overcome by ureteral dilation and the use of indwelling catheters. A subsequent severe attack occurred, and was similarly treated in February, 1926. This was followed by the passage of a well formed ureteral calculus two days later. The patient remained fairly comfortable until March, when he suffered another severe attack of right renal colic. Roentgenograms were again negative. On this occasion an obstruction was encountered in the upper third of the right ureter which proved impassable. No excretion could be recovered from the right kidney. Phenolsulphonphthalein given intravenously revealed a tardy excretion from the left kidney and a 4 per cent return in fifteen minutes. The urea nitrogen was 37.6 mg. per hundred cubic centimeters of blood. The temperature range was from 100.4 to 104.6 F.

Fig. 1.—Interior of bladder: *A, A'* and *A''*, area of leukoplakia involving the base, right upper posterior and anterior and left lower posterior and anterior walls; *B*, congested, granular ulcer partly surrounding right ureteral orifice, and extending toward left ureteral orifice; *C*, healed area; *D*, small diverticulum denuded of its epithelium; *E*, puckered area at internal sphincter of urethra, due to scar contraction following punch operation. Inset 1, lower part of right kidney: *A*, lower pole of posterior half; *B*, lower pole of anterior half; *C*, chronic suppurative inflammation involving the ureter just above the pelvis and extending posteriorly as a fistulous tract around the lower pole of the kidney. Inset 2, lower part of the posterior half of the left kidney: *A* chronic pseudomembranous, inflammatory deposit on the wall of calix and (*B, B'*) on the papillae of pyramids.

On the diagnosis of an acute infected hydronephrosis, a right lumbar incision was made and the kidney and ureter were exposed. At a point about 2 cm. below the ureteropelvic junction the ureter was enlarged and firm, and appeared to contain an impacted calculus. The kidney pelvis was markedly dilated and tense. The ureter was opened over the area described above, and numerous soft concretions were recovered, the largest comparing in size with a match head. Through this opening a quantity of the retained infected material contained in the kidney pelvis escaped. A bougie passed retrograde, to determine the presence of further obstructions, met an obstruction in the lower ureter. An extraperitoneal exposure of the lower right ureter was made over the point of the

obstruction. When the ureter was opened, numerous gritty concretions were found, which had offered resistance to the passage of the bougie into the bladder. The lower ureteral incision was then closed. A catheter was passed into the kidney pelvis through the lumbar incision, and the incision closed about the catheter and two cigaret drains. The patient received prompt relief, except from the persistent vesical distress. The flank incision drained and healed readily up to a draining sinus. At this point, a grayish white necrotic membrane covered with calcareous concretions appeared in the sinus up the skin margins. The patient became weaker, and died on the fifteenth day after the operation.

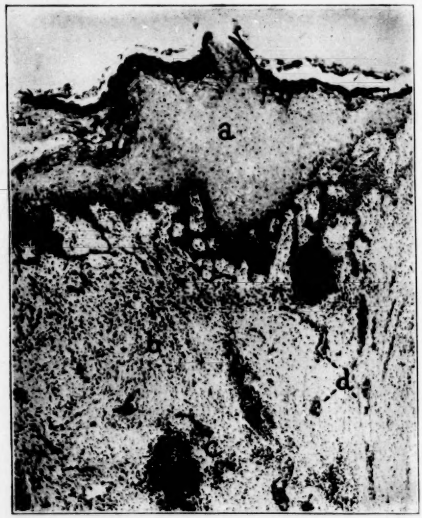

Fig. 2.—Section of bladder wall through the area of leukoplakia: *a*, thick squamous epithelium with surface keratinization and desquamation and large interpapillary processes extending into the hyperplastic corium (*b*), showing goups of small mononuclear cells (*c*) and congested capillaries (*d*); slightly reduced from a photomicrograph with a magnification of 65 diameters.

Necropsy.—External examination of the body revealed a suppurating incision in the right costovertebral angle, leading downward and somewhat anteriorly, 15 cm. in length. Several openings in this incision which led into the right renal fossa could be probed. These tracts were lined with a thick, yellowish white, opaque membrane, and were covered with a gritty, yellowish white, opaque, odorless material.

Internal examination showed some adhesions between the gallbladder and the second part of the duodenum. On section, the gallbladder presented a slightly thickened wall, and contained from twenty to thirty small, irregular, soft, greenish black concretions.

On removing the right kidney from its fossa, one entered a tract filled with purulent and necrotic material which led from the upper portion of the ureter, posteriorly through the suppurating incision in the right lumbar region described above, to the surface. The kidney, on section (fig. 1), showed the upper part of the ureter and pelvis to be slightly dilated. The mucous membrane was moderately congested and was the seat of small hemorrhages. Involving the wall of the ureter at the point at which the latter comes off from the pelvis, and extending posteriorly around the lower pole of the kidney, was a fistulous tract whose wall was thick, gray and opaque. Its lumen was filled with a ropy, gray, opaque material, and was continuous with the tract described above, leading to the skin surface. The kidney, otherwise, externally and on section, appeared normal. A right ureterotomy was evidenced only by a small amount of extravasated blood at the site of operation over the lesser pelvic brim.

The left kidney, on section (fig. 1, inset 2), showed a slightly dilated upper part of the ureter and pelvis. The mucous membrane of the pelvis was moderately congested and showed small, bright red, flamelike areas. The wall of one of the calices, and the papillae of several pyramids were covered with a slightly elevated grayish, opaque deposit. Otherwise, externally and on section, the kidney presented nothing abnormal.

When the bladder was opened (fig. 1), a large, irregular, slightly elevated, mucous membrane was visible, mostly flat and smooth, but in areas slightly papillomatous, with a milky thickening. This was localized in the region of the trigon, and extended over the right upper posterior and anterior, and the left lower posterior and anterior walls of the bladder. Here and there were small and larger congested, granular ulcers. Near the right ureteral orifice was a localized area where the mucous surface was smoother. This was an area of healing, following treatment of the bladder lesion by fulguration. Above and between the two ureteral orifices was a small pouch extending into the bladder wall. Its surface was ulcerated. The urethra at its internal sphincter was larger than normal, and was puckered, as a result of scar contraction following a punch operation.

A thorough necropsy otherwise revealed no noteworthy pathologic changes.

Microscopic examination of a section of the bladder through the area of leukoplakia (figs. 2 and 3) showed the normal transitional stratified surface epithelium whose nuclei and cytoplasm stain deeply with hematoxylin, and intercellular bridges and frequently mitotic figures. In areas the epithelium extended as small and large finger-like processes down into the corium. Passing toward the surface, the intermediate layer of epithelial cells and their nuclei stained more faintly with hematoxylin. The surface cells had become flat and scaly, and stained intensely with eosin. In areas they were desquamated. The nuclei that had survived were small and dark.

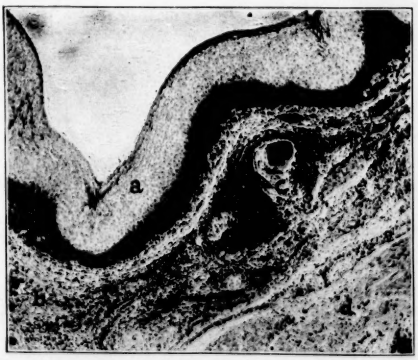

Fig. 3.—Section of bladder wall through the area of leukoplakia: *a*, thick keratinizing, squamous epithelium mounted on a hyperplastic corium (*b*); *c*, congested artery with hyalinized wall surrounded by small mononuclear cells; *d*, smooth muscle of bladder wall; reduced from a photomicrograph with a magnification of 70 diameters.

The corium was increased in amount and rich in elongated fibrous tissue cells and congested capillaries. The arteries were also congested, and their walls were frequently hyalinized. There was a diffuse scattering of small mononuclear cells and some polymorphonuclears. The former were sometimes gathered in large groups.

Following the surface of the section from the area of leukoplakia into the area of ulceration (fig. 4), the squamous

epithelium gradually disappeared and left a denuded corium covered, in places, by a small amount of necrotic material. In the corium, just below the surface, were invaginations of the former surface epithelium. These were seen in cross and oblique sections, forming structures composed of many layers of epithelial cells, with deep staining nuclei and cytoplasm. Mitotic figures were present in moderate numbers. The center of these cell masses permitted the light to penetrate more readily, suggesting a lumen which was responsible for designating these structures as pseudoglands. The corium, otherwise, was similar to that in the area of leukoplakia.

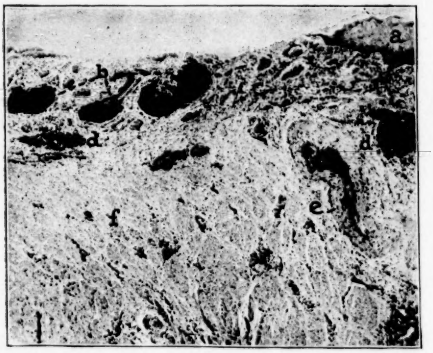

Fig. 4.—Section of bladder wall through area of ulceration: *a*, squamous epithelium at margin of ulcer; *b*, invaginations of squamous epithelium forming pseudoglands in the hyperplastic and congested corium (*c*); *d*, *d*, groups of small mononuclear cells; *e*, congested artery; *f*, smooth muscle of bladder wall; reduced from a photomicrograph with a magnification of 65 diameters.

A section of the wall of the fistulous tract, where it passed around the lower pole of the right kidney, showed the superficial part of the kidney cortex to be converted into a pale, pink, fibrin-containing material, with scattered fine and coarse, deep blue, granules of calcium. The lower part of this deposit and the adjoining kidney cortex were infiltrated with polymorphonuclears and some small and large mononuclear cells. Deeper into the kidney substance was a zone rich in small mononuclear cells and areas of red blood cells. The interlobular fibrous tissue was rich in connective tissue cells and congested capillaries. The rest of the kidney tissue was uninvolved.

A section of the fistulous part of the right ureter showed the same microscopic changes.

Sections of the deposit on the wall of the calix and papillae of pyramids of the left kidney (fig. 5) showed the tip of the papilla to be denuded of its epithelium and covered by a fine, granular, pale, purplish red material containing masses of bacilli. This deposit was continuous with the underlying, intertubular, fibrous tissue which was increased in amount and rich in elongated fibrous tissue cells, small mononuclear cells, polymorphonuclears, congested capillaries and areas of red blood cells. The rest of the pyramids and cortex was entirely normal.

A bacteriologic study of the area of leukoplakia of the bladder wall and of the wall of the right perirenal fistula resulted in the isolation of *Bacillus coli-communis* from each. The staphylococcus was also found in the tissues about the perirenal fistula.

The anatomic diagnosis was: chronic cystitis, characterized by the formation of leukoplakia, ulcers, and infection by *Bacillus coli-communis;* extension of infection by means of the lymphatics to the pelves of both kidneys; chronic pseudomembranous pyelitis of the left kidney; chronic suppurative pyelitis and ureteritis and perinephritic fistula about the right kidney; localized healing of the bladder mucosa following fulguration; punch operation of internal sphincter of urethra; subsidiary series, chronic cholecystitis and cholelithiasis.

The cause of death was chronic cystitis and perinephritic fistula due to *Bacillus coli-communis* and *Staphylococcus albus.*

The behavior of the squamous epithelium of the area of leukoplakia in its relation to the underlying corium may be considered in areas as precancerous in nature.

FREQUENCY

That leukoplakia of the urinary organs is still to be considered an uncommon condition is evident from the comparatively few cases reported in the literature. The greater number of cases have been reported in the German and French literature. The American literature contains reports by Beer,[9] Zipser,[10] Cabot, [11] Kretschmer, Cumming,[12] Richey, Hinman, Kutzman and Gibson, Valentine, and Wilhelmi. Though many urologists of vast experience have seen only a few cases, it is probable that others have been observed but not reported.

PATHOGENESIS

Numerous hypotheses have been advanced, but the causative factors in the production of leukoplakia are still uncertain. Chronic inflammations, irritation, and calculus formation are, according to Halle, Lichtenstern, Hinman, Kutzman and Gibson, and others, essential to the epithelial transformation. This conclusion would seem to find application in the case concerned in this report, for the history indicates some urinary difficulty for seventeen years, and a vesical calculus was found and removed at operation. This version is also given weight by Fox [13] in his discussion of leukoplakia buccalis. He cites as predisposing causes, in addition to syphilis, chronic irritations produced by jagged teeth, pipe smoking, alcohol, highly seasoned foods and hot foods. Lecone considers the condition to be congenital, and due to urogenital maldevelopment. Posodias and Li Virghi advise the institution of antisyphilitic treatment before other measures are undertaken, since they consider the lesion to be of syphilitic origin. The majority of authors, however, have accepted the phenomenon of metaplasia or a protective cornification as

Fig. 5.—Section through (*a*) chronic pseudomembranous inflammatory deposit on (*b*) papilla or pyramid of left kidney; *c*, masses of bacilli; reduced from a photomicrograph with a magnification of 65 diameters.

9. Beer: Leukoplakia of the Pelvis of the Kidney and Its Diagnosis, Am. J. M. Sc. **147**: 224, 1914.
10. Zipser: Am. J. Urol., 1912, p. 427.
11. Cabot: Am. J. M. Sc. **101**: 135, 1891.
12. Cumming, R. E.: Leukoplakia of the Renal Pelvis, Surg. Gynec. Obst. **36**: 189-195 (Feb.) 1923.
13. Kretschmer, H. L.: Leukoplakia of the Kidney Pelvis, Arch. Surg. **5**: 348-355 (Oct.) 1922.

the basis for the epithelial change to leukoplakia. Haythorn,[14] in his studies of metaplasia, concludes that the mucosa, destroyed beyond the hope of specific regeneration, seeks to protect itself with the best reparative cells it can produce in its exhausted state. This epithelial transition cannot be considered a physiologic one, for it persists after the removal of the primary source of irritation, and by its presence alone maintains an insurable state of chronic inflammation and irritation. As stated by Hinman, Kutzman and Gibson, it does not spontaneously regress after removal of the source of irritation, but in time tends to undergo malignant degeneration, just as does leukoplakia buccalis.

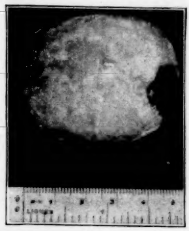

Fig. 6.—Vesical calculus removed at operation.

Age appears to be of no etiologic consequence, since cases have been reported from the age of 4 months to 71 years. The average age in seventy-four cases was 38⅔ years. Sixteen cases were found between the ages of 21 and 30, while twenty-seven occurred between the ages of 31 and 40.

A striking preponderance of males over females was found. In seventy-five cases in which the data were available and complete, the lesion occurred in the female nineteen times, and in the male fifty-six times, a ratio of practically 1 to 3. Hinman, Kutzman and Gibson, in their review of leukoplakia of the kidney pelvis, found that the lesion occurs equally in the two sexes.

ASSOCIATED PATHOLOGIC CHANGES

Leukoplakia of the urinary organs is found to be most commonly associated with urinary infection, obstructive lesions of the urinary apparatus, and urinary calculi. In four instances (Kischensky, Rona, Rechtenwald, Escat), it was found to be associated with squamous cell carcinoma of the kidney or bladder. This would seem to justify the opinion of Kretschmer, and Hinman and Gibson, that leukoplakia is a forerunner of squamous cell carcinoma of the kidney and bladder in many instances. The associated condition found in eighty cases is summarized in table 1.

TABLE 1.—*Associated Pathologic Conditions*

	Cases
Cystitis	58
Obstructive lesions	31
Pyelonephritis	75
Calculus	20
Tuberculosis	6
Carcinoma	4

The character of the obstructive lesions was found to include urethral strictures, obstructing prostates, vesical diverticula, ureteral strictures and kinks, calculi, malpositions of the kidney, and double kidney.

DISTRIBUTION

Leukoplakia of the urinary organs has been found most frequently in the bladder, and least often in the ureter. The extent of the involvement is variable, since it has been found to involve a small area in the bladder or kidney pelvis or the entire urinary apparatus. A summary of the eighty reported cases shows the distribution given in table 2.

In the case cited in this report, the development of the lesion was gradual. When first viewed, two years ago, the lesion involved only a part of the bladder floor. Subsequent and recent examination showed an extension well up onto the lateral walls of the bladder.

SYMPTOMS

The symptoms, as a rule, are those that characterize a severe intractable cystitis. The severity of the symptoms is probably proportionate to the depth and extent of the involvement of the mucosa, and to the coexistent disease. The course and development of the lesion is slow. Many patients have given a history of bladder distress of increasing intensity for many years. In the case concerned in this report, a history of seventeen years' duration was given. The cases reported by Kretschmer, Cabot and Nogue gave histories of fifteen, twenty and thirty years, respectively. Painful urination, marked frequency, hematuria, and the passage of urine rich in detritus are the most common symptoms complained of. A history of the passage of heavy shreds or pieces of tissue is a valuable and important symptom. The patient included in this report gave a history of bladder distress for many years, but stated that the condition had become particularly severe in the past six months. In the cases of leukoplakia of the renal pelvis and ureter, attacks of renal colic are common, resulting, most probably, from the passage of exfoliated tissue. In the case reported by Breselin[15] there were approximately 200 attacks.

TABLE 2.—*Distribution of Leukoplakia of the Urinary Organs*

Bladder	42
Bladder and ureter	2
Kidney pelvis	24
Kidney pelvis and ureter	5
Bladder, kidney and ureter	3
Ureter	1
Not stated	3

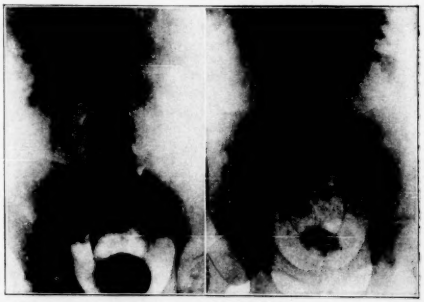

Fig. 7.—Pylo-ureterograms showing evidence of chronic inflammatory changes and a kink of the right ureter.

DIAGNOSIS

No positive information can be gained from the history or by casual examination. A positive diagnosis

14. Haythorn: On the Metaplasia of the Bronchial Epithelium, J. M. Research **26**: 523, 1912.

15. Breselin: Cholesteatomartige Desquamation im Nierenbecken bei primaeren Tuberculose derselben, Nierr. Arch. f. path. Anat. **99**: 289, 1885.

can be made only on careful urologic study. The cystoscopic picture is characteristic. The presence of the grayish white membrane free from blood vessels, irregular in outline, and with elevated margins, and surrounded by an injected, swollen mucosa, is rather typical of a leukoplakic lesion. A careful search for coexisting pathologic changes may prove valuable in excluding other possible lesions and verifying the picture of leukoplakia.

TREATMENT

The treatment as applied directly to the leukoplakia has been both medical and surgical. Successful results have been obtained with the more commonly used urinary antiseptics in a few instances. Stockmann reports the successful management of a case involving the kidney pelvis with silver nitrate lavages. Li Virghi has achieved brilliant results by the use of antisyphilitic treatment. In the case concerned in this report, these methods failed to prove beneficial. Fulguration has proved to be of value, according to Wilhelmi. The letter *c*, in figure 1, indicates a healed area of the bladder which had been extensively fulgurated.

Surgical treatment consisting of curettage, excision and cauterization has been followed by good results in some cases. In cases of leukoplakia involving the kidney pelvis, Hinman, and Kutzman and Gibson, advise nephrectomy if the condition can be proved to be unilateral.

CONCLUSIONS

1. As determined by the observations in a case of vesical leukoplakia associated with an unusual chronic inflammatory process (possibly preleukoplakic) involving both kidney pelves, one is obliged to concur in the opinion that chronic inflammations, irritations and calculi are important factors in the production of leukoplakia.

2. Leukoplakia involving the urinary organs is most commonly found in the bladder.

3. The lesion is more commonly found in the male in the ratio of approximately 3 to 1.

4. Pathologic observations indicate a precancerous tendency in the area involved by the leukoplakia.

5. Treatment has been variable and uncertain. Fulguration of vesical lesions is thought to be beneficial.

Crisler Clinic.

Results Without Explanation.—Of the many and varied uses of acetylsalicylic acid in pains and febrile conditions I do not propose to speak—they must be well known; but when thinking of its effects I always recall a case that surprised me. That is the worst of not having a scientific explanation of a result. Another doctor once handed over to my care a chronic alcoholic of long standing with advanced cirrhosis of the liver and ascites. He was well off, and required to be tapped at regular intervals. On one occasion this patient complained of rheumatic pain in his shoulder-joint, and I ordered him some acetylsalicylic acid, to find that not only was his shoulder relieved but a diuresis commenced which so completely relieved his ascites that he never required to be tapped again, although his habits had not altered. This case of ascites is again associated in my memory with another of entirely different origin. A girl with advanced pulmonary tuberculosis had been away to a sanatorium at St. Leonards and made a surprisingly good recovery, but some time after her return home began to complain of indigestion and abdominal discomfort. Examination showed considerable free fluid in the abdominal cavity, and a diagnosis of tuberculous peritonitis was made. . . . Administration of phenyl salicylate acted like a charm; . . . and the patient has remained in good health for the last fifteen or more years. I can only record the observation without explaining the result.—Dain, H. G., *Brit. M. J.*, Dec. 25, 1926.

DETERMINATION OF BLADDER PRESSURE WITH THE CYSTOMETER

A NEW PRINCIPLE IN DIAGNOSIS *

D. K. ROSE, M.D.
ST. LOUIS

Measurements of bladder pressure have been made from time to time for experimental purposes, but no successful attempt has been made to apply such observations in a convenient way to ordinary diagnosis. It is probable also that not even their importance in clinical diagnosis has been realized. The present paper, however, will attempt to show that such measurements are of great value in diagnosis and that, by means of a specially devised instrument, they can be made easily and with sufficient accuracy to afford much important clinical information.

It is felt, furthermore, that a new principle in diagnosis has hereby been added. Starting with the well known anatomic fact that the bladder wall and its internal sphincter are chiefly in control of the sympathetics and parasympathetics, I believe that measurements of intracystic pressure, with known quantities of fluid, might throw much light, not only on the question of whether or not a given case of incontinence is neurogenic in origin, but also on the question as to which set of nerves is chiefly involved. Further, by noting bladder sensations with the varying intracystic pressures and the associated amounts of fluid, it was hoped that quite exact data as to the strength and sensibility of the wall might be obtained, which would be of great value in many pathologic bladder conditions. With such ideas in mind, it was decided to determine by actual measurement the diagnostic value of observations of intracystic pressure in various conditions. The results have borne out the theory that such observations will enable one often to diagnose with accuracy the condition present even when other methods of diagnosis fail. Such determinations must embrace three fundamentals: (1) a transportable instrument of simple and accurate mechanism; (2) an understanding of the anatomy, and the physiologic and pathologic bladder phenomena, and (3) a constant simple method of recording results, the interpretation of which, based on variation from the normal, will give the desired information.

In order to test out the diagnostic possibilities of measurements of intracystic pressure, based on the foregoing theoretical considerations, I have devised an instrument called a cystometer. It consists of a 15 cc. syringe encased in a box, operable either by hand or by foot, which, by means of a two way valve, can force a more or less steady stream of fluid through either a catheter or a cystoscope, with each cubic centimeter of such fluid being recorded within view as the intracystic pressure is simultaneously recorded. The information obtainable, therefore, is the exact intracystic pressure as the bladder is being filled, from the first cubic centimeter to full capacity. The pressure is measured in millimeters of mercury, and the result is registered as a curve between millimeters of mercury and cubic centimeters of fluid. As the intracystic pressure

* From the Department of Surgery, Washington University Medical School and Barnes Hospital.

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

oscillates within considerable range, one constant point of reading must be used, namely, the highest pressure for each 1, 10, 25 or 50 cc. of fluid, and the type of oscillation explained in each case; i. e., whether influenced by a psychic, muscular or nerve factor.

Regarding the anatomy, the chief interest is in the normal bladder wall, the internal sphincter, and their innervation; and also in the posterior urethra and the external sphincter, as far as their influence extends in resisting the intracystic pressure. The physiologic phenomena have to do with the nerve control of the bladder wall, and whether the stimulus necessary to contraction is through the mucous membrane, muscular wall, posterior urethra, or external to the genital tract, even to brain centers. The manner of innervation of the bladder wall must take definite form in our minds,

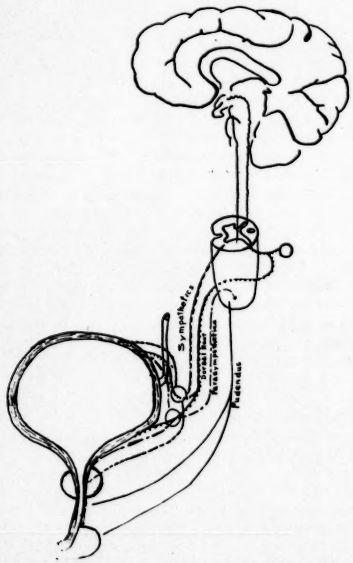

Fig. 1.—Diagrammatic representation of urinary bladder innervation.

in spite of the mass of conflicting experimental evidence. Elliott [1] finds that the vesical innervation varies in different animals. Epinephrine stimulates both motor and inhibitor sympathetics (cervicothoracicolumbar); the motor effect can be cut out by ergotoxin,[2] leaving the inhibitors. By this means, inhibitor fibers to the bladder wall are shown, their influence constantly shaping the cystometric curves. The parasympathetics (craniosacral) to the internal sphincter (trigonal area) figure largely in certain types of incontinence.

Clinical observations and symptoms are definitely changed from those expected experimentally, often by the fact that the nerve lesions are diffused, the strongest influences overbalancing, though moderated by the weakest; and also by the condition of the bladder wall, whether elastic, fibrous, atonic or hypertrophic, as well as by its state of irritability. Psychic influences are easily interpreted as variations from the normal and pathologic innervation curves.

The cystoscopic diagnosis of neurogenic bladder is now based on finding diminished urethral sensation and tone; i. e., visualizing the posterior urethra and internal sphincter, possibly a raised trigon, and interpretation of the type of trabeculation, together with general observations. Such data are incomplete and often subject to error. With the bladder wall as an index, all factors based on its innervation can be considered in a more accurate manner, together with the recognition of the internal and external sphincters and posterior urethral changes.

The preponderance of evidence is in favor of the belief that both motor and sensory fibers travel in the same nerves, as brought out by Langley and Anderson,[3] and that sympathetic innervation is crossed. The behavior of the urinary bladder is a counterbalance between the action of the sympathetics (vesicothoracicolumbar pathway [Ranson]), through the inferior mesenteric ganglions, with outflow from between the second dorsal and the third lumbar anterior roots, stimulation of which "excites contraction of the internal sphincter (trigonal area) of the vesical musculature, causing retention of urine," [4] and the parasympathetics (vesicocraniosacral pathway [Ranson]) with outflow from the second and third anterior sacral roots, stimulation of which "excites contraction of the vesical musculature exclusive of the internal sphincter (trigonal area), the contraction of which it inhibits and thus produces urination." [4] With these conclusions Barrington [5] agrees. Thus, as Jackson [6] observes, the sympathetics "control the mechanism of vesical filling, and the sacral supply directs the mechanism of emptying the bladder." Further, Barrington [7] shows that the pudic nerve partially controls sensation of the posterior urethra and also supplies its tone; incontinence occurs when both are cut, but to less degree than when both pudics and pelvics are cut. He feels that the pelvics carry the sensation of pain. Ranson,[8] in recent work, sectioned the dorsal roots on both sides from the third lumbar to the third sacral inclusive, in two cats, and there resulted distention of the bladder with incontinence. The same operation, confined to one side, in twenty-one other cats resulted in no bladder change, except in two, in which there again resulted distention, with incontinence. Barrington,[5] working with cats, found that removal of the inferior mesenteric ganglion increases frequency by removing inhibition, and that the frequency does not attain its maximum at once, but continues to increase for some weeks.

Head [9] states that lesions of the mucous membrane of the bladder affect the cutaneous area of the lower sacrals (third and fourth), while the pain of ineffectual contraction is diffused over the eleventh and twelfth dorsal and first lumbar areas; he further finds that with irritation of the parasympathetics the "bed would be always wet," that is, incontinence of small amounts, frequently associated with desire; whereas with stimulation of the sympathetics a paradoxical incontinence or large residual urine with overflow would result, and states that if this type were "catheterized two to three

1. Elliott, R. R.: J. Physiol. **35**: 367, 1907.
2. Dale and Ewins: J. Physiol. **48**: 3, 24, 1914.
3. Langley, J. H., and Anderson, H. K.: J. Physiol. **19**: 71, 1895-1896.
4. Ranson, S. W.: The Anatomy of the Nervous System, ed. 1, 1920, p. 354.
5. Barrington: Quart. J. Exper. Physiol. **9**: 261, 1915-1916.
6. Jackson, H. C.: Surg. Gynec. Obst. **25**: 346-360 (Sept.) 1917.
7. Barrington: Quart. J. Exper. Physiol. **8**: 33-71, 1914-1915.
8. Ranson, S. W.: Personal communication to the author.
9. Head, H.: Brain **16**: 84, 1893.

times a day the bed would never be wet." For a third type, he finds that if the analgesia points to a local lesion above the ninth thoracic, from 15 to 20 ounces (450 to 600 cc.) of urine would pass without the patient's knowledge, this being a complete, normal but automatic act. An interpretation of these results agrees with Ranson's belief as to innervation of the bladder, and may be taken as basic in analyzing the cystometric curves, excepting that clinically the strength and irritability of the bladder wall must be always considered. Further fundamental points to record are (1) the point at which a desire to void is first noted (marked with an asterisk on the curve), also noting any influencing factor, such as mental balance, type of respiration, muscle spasm, and irritability of urethra; (2) points at which intracystic pressure becomes "severely painful" (marked "s. p." on the curves); (3) emptying pressure, i. e., average points at which an unobstructed bladder progressively empties; (4) the promptness of return, following a sharp bladder wall contraction, to the base pressure, indicating the tonicity of the bladder wall; (5) point at which elasticity is markedly diminished by complete filling of the bladder; (6) corrections made for raised intra-abdominal pressure, due to position of body, head or arms, as influencing the direct contraction of the abdominal muscles, and (7) whether or not there is leakage about the catheter and, if present, at what point it occurs, showing the necessary pressure to cause the opening of the internal sphincter and to overcome the resistance of the posterior urethra and external sphincter. Associated tone of the anal sphincter should be noted. A 22 F. single coudé catheter or 24 F. Brown-Buerger cystoscope is used as a routine in adults.

Fig. 2.—Cystometer (right) with intake through petcock of copper water tank (center); recording instrument at left.

At every cystoscopic examination it is desirable to know whether the nerve control of the bladder is normal; and if a pressure curve is obtained in the preparatory filling with sterile water, even though it is known that there is no central nervous system change, many interesting questions can be answered as to the degree of decompensation of the bladder wall musculature, its state of irritability, and the psychic influences. The normal male bladder has a capacity of from 150 to 200 cc. less than that of the normal female, as judged by equal points of pressure on their cystometric curves after carefully ruling out all extraneous influences.

In figure 2 the cystometer, water tank, and recording instrument are shown attached to a steel bar, which is raised or lowered by the rack and pinion, operating on the standard. All parts are readily detached and may be used separately or, collectively, they may be attached to a cystoscopic table. The cystometer, on the right, is tipped to show the round face of the water manometer (a Sanborn bladder manometer), below which is the small rectangular opening of the fluid counter. The long pendent rubber tube, with glass tip, connects with a catheter or petcock of a cystoscope; water is forced through it by a circular motion of the cystometer handle. In the center is the copper water tank. It has been especially convenient to have the fluid supply at the operator's side rather than to use the usual gravity method. The recording instrument on the left obviates the tiresome necessity of plotting the pressure curves with pen and ink. It is tipped to show the graduated series of punches, which record the curve by perforations through a specially prepared cystometer chart.

Figure 3 is an example of one type of normal male curve. In the three curves, the one of crosses represents the highest intracystic pressure obtainable, with given amounts of fluid. In this curve are represented abdominal wall, diaphragm descent, and bladder wall pressure. The curve of solid dots is the intracystic pressure made possible by the contraction of the bladder wall muscle alone. The curve of hollow dots is the raised pressure of the diaphragm descent, taken on deep inspiration as soon as the curve of solid dots is recorded, therefore being an addition to it rather than a pressure registering from the base line. It is constant in all, and as a deep inspiration is liable to excite abdominal contraction, is dropped in subsequent charts. One should note the normal points; the even rise of all three curves as the bladder fills; "the first desire to void," at 175 cc. (indicated by an asterisk) and the emptying of the bladder around the catheter (*v*), at 450 cc. with a pressure of 50 mm. of mercury. This indicates that by sufficient stimulation the parasympathetics overbalance, and so suddenly relax the internal sphincter and contract the bladder wall. If it were not necessary to overcome the obstructive influence of the catheter, the phenomenon would occut between 20 and 40 mm. of mercury. In this and all subsequent charts, the figures given to indicate important points, as, for example, 150 cc. of fluid for the "first desire to void" (*), are normal within variable limits of from 25 to 50 cc. It is rather the interpretation of the entire curve that gives the desired information.

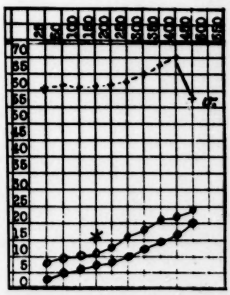

Fig. 3.—Bladder wall resistance, as measured by the cystometer, in a normal man, aged 30.

The emptying pressure is obtained by connecting the pressure gage abruptly with the cystoscope or catheter at different phases of the emptying bladder. The normal musculature, if suddenly blocked in its contraction, will register from 50 to 70 mm. of mercury, provided the organ is well filled; as it lowers in fluid content, the pressure lowers. This is a further check against psychic inhibition, in that should the filling

curve from such influence be low, the emptying curve will more nearly indicate the strength of the bladder wall.

REPORT OF CASES

CASE 1.—T. L., a man, was diagnosed by the aid of the cystometer as having a hyperirritable bladder. The urologic diagnosis was neurogenic bladder, chronic cystitis *(B. coli)*, chronic urethritis, and chronic prostatitis. The kidneys were normal. The neurologic diagnosis was a normal central nervous system, thus disproving the urologic diagnosis as in many other similar cases. The patient's chief complaint was frequency of urination. There was no residual urine, and the Wassermann reaction was negative. The intracystic curve (fig. 4) shows a slightly raised initial pressure; i. e., with from 25 to 50 cc. of fluid, and a low threshold of "capacity" sensation, which was followed by severe pain, as shown in the abrupt rise of the curve. The bladder emptied about a 22 F. catheter at the high pressure of 70 mm. mercury with only 250 cc. of fluid. The abdominal pressure curve is high, as would be expected by the addition of the intra-abdominal pressure to an unusually high intracystic pressure. The same curve was obtained when both catheter and cystoscope were used at different intervals over a period of observation of three months. Extreme relaxation of the internal sphincter, sufficient to allow voiding about the catheter, and the unusually powerful bladder contraction, together with the severe associated pain, indicate marked stimulation of the parasympathetics.

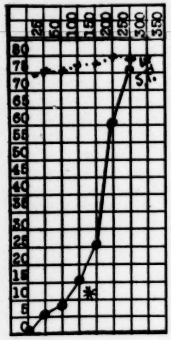

Fig. 4.—Observations in case 1.

CASE 2.—T. B., a man, was admitted with a cystometric diagnosis of hypertrophic bladder, a urologic diagnosis of hypertrophy of the prostate (median bar) and a neurologic diagnosis of a normal central nervous system. His chief complaint was marked frequency of urination. There was 100 cc. of residual urine, which was not infected. The Wassermann reaction was negative. In contrast to the curve in figure 4 we have in figure 5 less irritability, as shown by the first desire to void at 150 cc. and the low abdominal pressure curve (indicated by crosses). The hypertonicity is indicated by the abrupt rise immediately following the first sensation of fulness, and by the fact that this rise is maintained quite indefinitely.

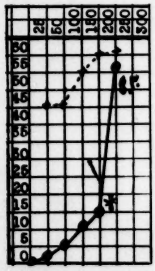

Fig. 5.—Observations in case 2.

CASE 3.—W. L. H., a man, was admitted with a cystometric diagnosis of hypertrophic bladder wall, and a urologic diagnosis of hypertrophy of the prostate with acute urinary retention. The neurologic diagnosis was not obtained. There was 800 cc. of residual urine. It was infected with staphylococci and *B. coli*. The patient's chief complaint was acute retention of urine for two days previous to admission. His family physician had been unable to pass a catheter because of an enormous intracystic prostatic enlargement. For the same reason, as well as because of bleeding, the cystoscopic examination was unsatisfactory. The cystometric examination ruled out neurogenic bladder. The first desire to void is high at 25 mm. of mercury, if it were not considered as a point on the terminal sharp rise, and with 150 cc. of fluid in the bladder. Severe pain at 55 mm. of mercury with no leakage about the catheter is normal, however; its occurrence at 200 cc. indicates a forceful bladder contraction. The high constant abdominal curve with sharp voluntary relaxation indicates increased tone with good nerve control.

CASE 4.—G. G., a man, was admitted with a cystometric diagnosis of neurogenic bladder (dorsal root degeneration), and decompensation of the bladder wall; a urologic diagnosis of neurogenic bladder and syphilis, and a neurologic diagnosis of tabes dorsalis. The patient's chief complaint was enuresis. There was 300 cc. of residual urine, infected with *B. coli*. The blood Wassermann reaction was four plus. Tendon reflexes were absent, and the rectal sphincter was relaxed. Sensation was markedly diminished, in spite of the cystitis present, as shown by first desire to void at 850 cc. A markedly decompensated bladder wall was indicated by the severe pain with weak contraction at from 850 to 900 cc. of fluid. The bowels were incontinent at the final pressure, though there was no leakage about the catheter. The abdominal wall pressure (line of crosses) was low at the beginning of the filling, but afterward was fairly high. It did not change with the rising intracystic pressure. The emptying pressure was 15, 5 and 0 mm. of mercury, being recorded as each one third of the bladder content emptied.

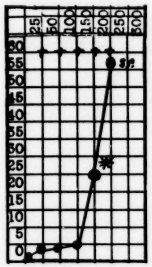

Fig. 6.—Observations in case 3.

CASE 5.—G., a man, was admitted with a cystometric diagnosis of neurogenic bladder (dorsal root degeneration): a urologic diagnosis of neurogenic bladder and syphilis, and a neurologic diagnosis of tabes dorsalis. His chief complaint was urinary retention. The urine was infected. The tendon reflexes were absent; the patient had Charcot knee, and the Wassermann reactions of the blood and spinal fluid were four plus. The rectal sphincter was relaxed. Enuresis marked the onset of the urinary trouble. For the past four years the patient had catheterized himself from four to six times a day. He has had much antisyphilitic treatment. I feel that the curve in figure 8 represents the possible end result to be obtained by similar treatment, local and general, in such a type as that of case 4 (fig. 7), in that the bladder wall muscle had compensated to some degree by the long continued catheterizations, which lowered the thresholds of "capacity" sensation and of severe pain. The low abdominal curve was due to the patient's poor general condition and extensive dorsal root degeneration. The emptying pressure was 30, 21 and 10 mm. of mercury.

CASE 6.—H. D., a man, was admitted with a cystometric diagnosis of neurogenic bladder (irritative, low spinal cord), a urologic diagnosis of neurogenic bladder and syphilis, and a neurologic diagnosis of tabes dorsalis (meningovascular involvement). The patient's chief complaint was marked frequency of urination, both day and night. The urine was not infected, and there was no residual urine. The Wassermann reaction of the blood and spinal fluid was four plus. The rectal sphincter was relaxed, and the tendon reflexes were exaggerated. The patient had had intensive antisyphilitic treat-

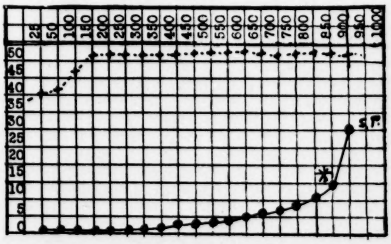

Fig. 7.—Observations in case 4.

ment for the past four years. His general condition was very poor and remarkably similar to that of patient 5 (fig. 8). His first desire to void at 25 mm. of mercury with only 50 cc. of fluid in the bladder indicates the marked degree of irritability, as does the severe pain at 65 mm. of mercury with only 100 cc. in the bladder. Each voiding of the patient was recorded for several days. Those of the morning averaged 350 cc., and later in the day 150 cc., showing that 100 cc., shown in the

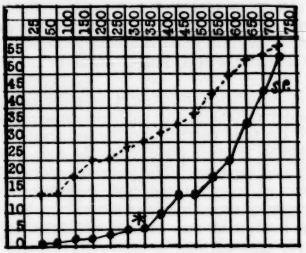

Fig. 8.—Observations in case 5.

chart, therefore, is due to the irritability of the parasympathetics by the catheter. The symptom frequency is explained also by irritability of the parasympathetics and their overbalancing the influence of the sympathetics, thereby increasing the bladder wall tone and keeping the internal sphincter slightly relaxed. The high initial abdominal pressure further indicates hyperirritability. The emptying pressure was 65, 30 and 10 mm. of mercury.

CASE 7.—Figure 10 is a curve in the case of C. H., a neurologically normal adult immediately after 30 cc. of 1 per cent procaine hydrochloride was injected through the sacral foramen. In analysis, I consider that the parasympathetics are ruled out, leaving the sympathetics in power as shown by the relaxed bladder wall and tightly closed internal sphincter, allowing no leakage about the catheter. The patient's first desire to void, absent to 950 cc., also is in favor of Barrington's idea that the parasympathetics carry pain sensations. The abdominal curve in this case represents the true intra-abdominal pressures as transmitted to the bladder contents. The 5 mm. of mercury intracystic pressure is due to the muscular elasticity alone.

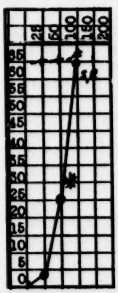

Fig. 9.—Observations in case 6.

The emptying pressure was 10, 5 and 0 mm. of mercury.

CASE 8.—L. D., a man, with postoperative retention, had a cystometric diagnosis of neurogenic bladder. He had been operated on for hydrocele eighteen hours previous to my obtaining the pressure curve. He had been unable to void since operation, although he was not particularly uncomfortable. The general condition was normal. There was 800 cc. of residual urine, which was not infected. Sensation was quite normal in that the first desire to void occurred at 150 cc. (fig. 11). It was diminished, however, as shown by the fact that with a filling of 800 cc. he had no more pain than before catheterization, distinguishing the two types of sensation. The last abdominal pressure (line of crosses) of 55 mm. of mercury at 850 cc. was maintained, indicating that the reflex inhibition at last was broken. There was no leakage around the catheter. Two factors are associated in the explanation of postoperative retention; namely, the reflex stimulation of the sympathetics, and the later dilatation of the bladder with fatigue of its walls. The fact that voiding frequently follows the first catheterization is undoubtedly due to the stimulation of the parasympathetics at the trigonal area. The emptying pressure of 60, 30 and 10 mm. of mercury again indicates that the parasympathetics influenced the maintaining of the last abdominal pressure registration.

CASE 9.—R. M., a woman, was admitted with a cystometric diagnosis of neurogenic bladder (irritative, low spinal cord), and a decompensation of the bladder wall; a urologic diagnosis of neurogenic bladder (based on finding a constant residual urine without any accountable obstruction), and a neurologic diagnosis of spina bifida, with an involvement of the third, fourth and fifth sacral nerves. The patient's chief complaint was incontinence both day and night. There was 600 cc. of residual urine, which was infected with *B. coli*. The capacity sensation or the first desire to void occurred at 300 cc. (fig. 12). Severe pain was felt at a low pressure of 45 mm. of mercury. Both facts point to an anomalous parasympathetic innervation, and the weak contraction of the bladder after 300 cc. of fluid to severe pain indicates some decompensation of its muscular wall. The rising initial intracystic pressure, though not powerful, indicates parasympathetic stimulation, especially when one remembers the bladder dilatation necessary to accommodate 600 cc. of residual urine. In immediately subsequent curves, there was each time terminal

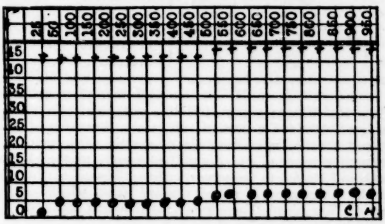

Fig. 10.—Observations in case 7.

leakage about the catheter. Weeks later, as the cystitis was cleared up, the intracystic curve flattened out. The abdominal wall curve was interpreted as voluntary inhibition. The emptying pressure was 40, 15 and 0 mm. of mercury.

CASE 10.—M. S., a man, was admitted with a cystometric diagnosis of ataxic bladder, and hyperirritability; a urologic diagnosis of neurogenic bladder (based on visualizing the verumontanum with the cystoscope). A laminectomy was done (first and second dorsal areas) by Dr. Ernest Sachs, whose operative note states: "Parachnoid rather turbid; cord atrophic, with small number of blood vessels, yellow

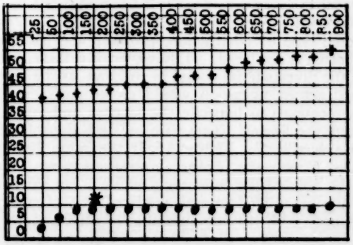

Fig. 11.—Observations in case 8.

in region of posterior columns." The patient's chief complaint was incontinence, both day and night, and a weak stream of urine. There was 350 cc. of residual urine infected with *B. coli*. The patient was very rarely able to empty the bladder completely. The spinal fluid was normal, and the blood Wassermann reaction was negative. The tendon reflexes were exaggerated, and Babinski and Chaddock reflexes were present. The patient had a prostatic median bar formation, which

was removed with no change in residual urine or improvement in the force of the stream. The intracystic curve (fig. 13) showed a lowered threshold of sensation, with the first desire to void occurring at 100 cc. and severe pain present on the addition of another 100 cc. of water. The rapid rise with terminal leakage about the catheter indicated a strong bladder wall and parasympathetic stimulation (opening internal sphincter and contracting bladder). The low abdominal pressure was due to voluntary inhibition. This case represents an ataxic type of neurogenic bladder in that both sympathetics and parasympathetics were hyperirritable. The internal sphincter had increased tone and the wall correspondingly increased inhibitory stimuli, so obstructing the bladder when there was an attempt to void. This counterstimulation requires a higher level of activity of the parasympathetics. It is possible that the pudic nerve irritability, increasing the tone of the compressor urethrae, was an added obstructive factor to overcome. The emptying pressure was 65, 40 and 20 mm. of mercury.

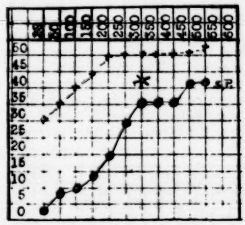

Fig. 12.—Observations in case 9.

CASE 11.—V. was admitted with a cystometric diagnosis of neurogenic bladder, a urologic diagnosis of neurogenic bladder, and a neurologic diagnosis of spastic paraplegia. The greatest involvement was from the seventh to the eleventh dorsal, and limited to the motor system. The spinal fluid was normal. There was 75 cc. of residual urine, which was not infected. The blood Wassermann reaction was negative. The rectal sphincter was relaxed.

The patient's chief complaint was incontinence, without desire, both day and night. The intracystic curve (fig. 14) points to definite interference with the parasympathetics, or possibly to counterstimulation of the sympathetics, in that the first desire to void occurred at 250 cc. and was immediately associated with complete relaxation of the internal sphincter, thus reproducing the patient's type of incontinence; that is, an automatic act immediately on sufficient stimulation. The abdominal wall pressure was within normal limits.

COMMENT

Regarding the value of intracystic pressure in diverticulum formation, it is my opinion [10] that in "very nearly all diverticula there are both congenital and acquired factors; i. e., a potential hernia exists in many bladders which will show itself only on the development of some type of obstruction, provided the pathway of this hernia is not large. If, however, it is large, we may have the diverticulum found in children, as the repeated normal act of urination would create sufficient intracystic pressure to herniate the mucosa and submucosa through the fibrous tissue path, or area unprotected by muscle bundles." Figure 15 is the same ballooning cellule; ("with the bladder in relaxation we consider that the floor of the ballooning cellule is not farther out than the outer bladder wall surface." [10]). Cystograms were made with varying quantities of fluid and pressure (the larger, 600 cc. fluid, 70 mm. of mercury pressure; the smaller, 300 cc. fluid, 25 mm. of mercury pressure). As a ballooning cellule or early dissecting bladder wall hernia is harmless except as indicating increased back pressure, it is necessary for correct interpretation of such a cystogram to know whether we are dealing with a markedly elastic small sac, or a fixed, well formed diverticulum, which should be removed. This can be done only by registering the intracystic pressure and content of bladder simultaneously as the cystogram is made.

10. Rose, D. K.: South. M. J. **19**: 206-212 (March) 1926.

SUMMARY

1. Measurements of bladder pressure, with known quantities of fluid, indicate the strength and irritability of the bladder wall as well as the condition of its motor and sensory innervation.

2. Cystograms of diverticula made with known bladder filling, as to both the amount of fluid and the intracystic pressure, can be accurately interpreted as to whether the malformation is an early, small but elastic type, or whether it is of longer duration and definitely fixed.

3. The cystometer, offering a new method of diagnosis, under all conditions enables one simultaneously to record the fluid content and the intracystic pressure, as the bladder is being filled, from the first cubic centimeter to full capacity. The data are plotted between millimeters of mercury and cubic centimeters of fluid by an accessory recording instrument.

4. The instrument may be used to fill the bladder for cystoscopic examination, and thereby furnish supplemental information.

413 Wall Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HENNESSEY AND ROSE

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: In leukoplakia there is marked cornification or increase in the epithelial cells. It seems that leukoplakia is due to chronic irritation, though practically every cause in the category—trauma, stone, syphilis, tuberculosis, carcinoma and irritation from the kidney—have been given as the etiology. There is nothing new in the treatment. Fulguration is one of the later types of treatment, and has been known to effect some improvement, but I think the greatest improvement results from removal of the cause. If this can be done, it is probable that our patients will be cured; but if not, regardless of fulguration or any other treatment, they will not get well. If Dr. Rose's deductions in regard to his instrument are of practical value and can be demonstrated clinically, we owe him a debt of gratitude for presenting the instrument to us.

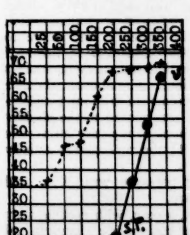

Fig. 13.—Observations in case 10.

DR. EVARTS A. GRAHAM, St. Louis: I am not a urologist, but I have watched Dr. Rose's work in its development and have been tremendously interested in the new features of it. It seems to me he has added a very important new principle not only in diagnosis but perhaps also in clearing up some points of physiology. I cannot say anything about how practical it will be, for that can be determined only by trial; but I was anxious to commend Dr. Rose for the careful persistence and ingenuity with which he has carried his work through in making this instrument, which seems rather complicated but after all is simple in its application.

DR. DANIEL N. EISENDRATH, Chicago: This is the most important contribution to the pathology and physiology of the bladder that has been made for several years. I have had occasion to look over the literature of the last few years, and I cannot find anything that gives one an idea of the amount of pressure and the amount of fluid it takes to relax the sphincter muscle and empty the bladder as does this instru-

ment of Dr. Rose's. At the same time, I wish to call attention to a method I saw employed in Paris last summer; namely, filling the bladder with the same sort of barium solution as the enterologists use in a gastro-intestinal examination. I have never had as forcible a demonstration of the bladder function as in this method. The emptying time of the bladder as seen under the radioscope is remarkably fast. One would not think that a bladder filled with this barium solution could empty itself in so short a time. It was interesting to see by this method the diverticula on the different walls of the bladder, and how rapidly they would empty themselves. One of the most instructive features of the demonstration was that while the bladder was emptying itself through the urethra, there was a decided reflux up through the ureter on which the diverticula were located.

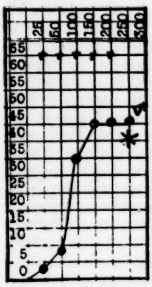

Fig. 14. — Observations in case 11.

DR. WILLIAM E. STEVENS, San Francisco: An interesting feature in connection with leukoplakia of the bladder is the prompt response that sometimes occurs under antisyphilitic treatment, notwithstanding a negative history and the absence of positive clinical data. In a case under recent observation, the bladder had been opened and curetted, and fulguration had been tried without result. Following the injection of neoarsphenamine, all symptoms showed marked improvement. In every case of leukoplakia we should try antisyphilitic measures before resorting to a more radical procedure.

DR. J. L. MORGAN, Memphis, Tenn.: I was fortunate in seeing the case of Dr. Hennessey's. I saw the stone removed from the ureter and saw the extensive involvement of the kidney and ureter, but did not see the bladder leukoplakia. As to the cause of this disease, we are at sea as yet; but there is no doubt that direct irritation is an etiologic factor of leukoplakia wherever it may be. Leukoplakia of the bladder is secondary to kidney infection, and therefore we should try to eliminate this infection, if present, in trying to clear up a leukoplakia of the bladder. As a rule, this condition has extended to such an extent when we see the patient that we rarely ever are able to institute a cure. The proper way to treat leukoplakia of the bladder is by doing a suprapubic cystotomy; and with the bladder well open an actual cautery can be used directly on the area involved.

DR. HERMAN L. KRETSCHMER, Chicago: I wish to compliment Dr. Rose on working out this remarkable instrument; I am sure that as its use becomes more general many new facts in the physiology of the bladder will be brought out. Regarding Dr. Hennessey's paper, we should not forget that leukoplakia occurs elsewhere. We are all familiar with the fact that it occurs in the gallbladder, in the rectum, on the tongue and in the mouth. It is generally believed that irritation is a necessary factor, but I do not believe that this has been proved, and it is my impression that it is a relatively common occurrence. Perhaps Dr. Hennessey could find records of only eighty cases because many cases are not recognized and doubtless some that are not reported. Dr. Hennessey stated that the typical picture shows a very large, white area. Areas of leukoplakia are not always large. I have seen multiple patches that were very small. I agree with him that it is our general impression that this condition occurs in one or two large plaques, as he showed from his illustrations, but on the other hand, I believe that many cases of leukoplakia are overlooked because we are not in the habit of thinking of the possible occurrence of leukoplakia in small plaques. It may be that these all begin with small areas that coalesce to form the larger ones. Since the paper to which Dr. Hennessey referred was written I have seen six additional cases, two in the kidney, two in the bladder and two in the urethra. I believe that they are relatively common but that we overlook them.

DR. W. F. BRAASCH, Rochester, Minn.: Contributions of the nature of Dr. Rose's paper are to be commended, and the section should encourage more contributions that will give us information regarding the physiology of the bladder. My associate, Dr. Crenshaw, attempted to construct an instrument whereby he could determine the degree of intrarenal pressure, so that it might be possible to differentiate between retention caused by lesions in the central nervous system and by obstruction. To this end he had a V-shaped glass tube made, which he partially filled with mercury. Unfortunately, it did not work out very practically. We could not differentiate between the two types of bladder by this method. In the doubtful cases, in which we did not know whether they were neurogenous or not, we were surprised to see how great the intracystic pressure was, and in the obstructive cases the intracystic pressure was not nearly so high. I wish Dr. Rose would tell us exactly how his method will overcome the difficulties my associate had.

DR. RUSSELL A. HENNESSEY, Memphis, Tenn.: In reviewing the points outlined in the treatment of leukoplakia of the urinary organs, I found that the methods varied a great deal. Removal of the associated pathologic conditions, such as obstructive lesions, infections, calculi or other lesions found in association with leukoplakia, does not bring about a regression or resolution of the lesion as thought by many. The leukoplakia lesion most frequently becomes a distinct disease entity which tends to progress or undergo, as it has in many instances, malignant degeneration. Many observers share the opinion that leukoplakia of the urinary organs is a definite forerunner of squamous cell carcinoma. The benefits of antisyphilitic treatment mentioned by previous observers and in the discussion proved in this case to be only symptomatic. Under the most vigorous treatment, the leukoplakia area remained unchanged, except for the exfoliation of some of the calcareous incrustations. The only procedure that had any effect on this extensive cornification was fulguration.

DR. D. K. ROSE, St. Louis: I shall be glad to consider the barium, as suggested by Dr. Eisendrath, and I hope that Dr. Kretschmer will use the instrument, as I am sure it has possibilities. As to the trouble Dr. Braasch's associate had, I think the amounts of fluid and the amount of pressure were not simultaneously recorded. Whenever we have had a very low pressure we find a neurogenous bladder. A practical application of the instrument is in such a case as the one I mentioned with the large prostate, in which cystoscopic examination is unsatisfactory. It also shows whether there is a meningovascular type of syphilis or degeneration of the dorsal roots. With the prostatic hypertrophy, it gives an idea of the strength of the bladder wall, with some index as to the amount of obstruction, and whether this is constant or not. Arrangements are now under way for the Sanborn Company to make the cystometer, if any one cares to work with it. I hope several will, for there are many conditions in which there is interesting work to be done as, for example, in enuresis.

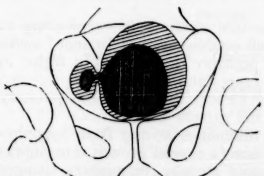

Fig. 15.—A diverticulum which in its process of herniation has not dissected entirely through the bladder wall. Its variation in size with changing intracystic capacity and pressure demonstrates an elastic muscular wall. (Drawn to scale.)

Theory of Diagnosis.—The best diagnosis that we can attain is that which, when we have observed accurately, interpreted adequately and symbolized correctly, best satisfies the intellectual and affective tendencies and, in the hippocratic phrasing, enables the physician to do what is right and to constrain to his will not only the patient, but the attendants and the circumstances.—Crookshank, F. G.: *Lancet* **2**:998 (Nov. 13) 1926.

THE DISABILITIES CAUSED BY HYPOPHYSECTOMY AND THEIR REPAIR

THE TUBERAL (HYPOTHALAMIC) SYNDROME IN THE RAT *

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PALO ALTO, CALIF.

From results gained in an extensive series of investigations on the dog carried out in 1922 and earlier, Camus and Roussy,[1] and Bailey and Bremer [2] concluded that the hypophysis exercises few of the functions that have been attributed to it. Camus and Roussy state, in answer to the question, What is the proper function of the hypophysis? "We would not know how to reply except by hypotheses." Bailey and Bremer likewise affirm, "But we must admit that we have little actual knowledge of its functional significance in the adult animal." Other investigators have in most cases considered that the so-called pituitary disorders, including obesity and not infrequently glycosuria and polyuria, are due to their operatively induced pituitary deficiency. Recently Roussy [3] has been willing to grant that the rôle of the anterior pituitary in skeletal growth is well established, and Bremer [4] states that the pituitary is probably the controlling factor in growth. Evans and Long [5] and Evans [6] have presented rather conclusive evidence that anterior pituitary injections stimulate the growth rate.

The fact that the disabilities arising from hypophysectomy in the amphibia (a slowed growth rate, suprarenal cortex and thyroid atrophy, pigmentary changes and failure to metamorphose) can be repaired by pituitary transplants [7] and by the injection of the bovine hypophysis [8] led me a number of years ago to attempt the ablation of the hypophysis in a mammal in which a replacement therapy could readily be given. For various reasons I selected the rat as the experimental form.

I attempted several operative approaches to the gland and methods for its destruction, only to discard them. There finally evolved from these attempts a method which I now use, by which either the whole gland or only the posterior lobe can be rapidly ablated, the operation requiring only from twenty-five to thirty-five minutes. The ventral approach is used, which gives access to the gland through the sphenoid without entering the buccal cavity. After exposure of its ventral surface, the gland is sucked out through a glass cannula with negative pressure. The dural sheath of the gland, dorsally (diaphragma sellae), and the pituitary stalk are left intact. In contrast to the copious flow of cerebrospinal fluid reported in the dog, no escape of this fluid can be seen in this operation, even with the binocular dissecting microscope, though in test operations a considerable flow has resulted from rupture of the membranes covering the brain. Healing takes place rapidly, and no clear case of meningitis has developed. I have done by this method more than 110 ablations which have been proved total by serial sections through this region. Animals from 25 days (weight, 67 Gm.) to 18 months in age have been used. In addition to this, in a considerable number of animals lesions have been made in the hypothalamus by the well known temporal route, the pituitary being purposely avoided. These two operations, pituitary ablation and tuberal injury, produce distinct and characteristic syndromes.

TABLE 1.—*Inhibition in Growth and Regression in Weights of Suprarenals, Thyroids and Gonads Following Hypophysectomy* *

	At Operation			At Necropsy					
							Weight of Both		
Type and Designation of Rat	Age, Days	Weight, Gm.	Length,† Mm.	Age, Days	Weight, Gm.	Length, Mm.	Suprarenals, Gm.	Thyroids, Gm.	Gonads, Gm.
Hyp. out BH 1217	54	127	169/141	69	121	169/143	0.0135	0.0114	0.0132
Hyp. out BH 1223	54	127	160/141	84	105	170/141	0.0080	0.0082	0.0080
Hyp. out BH 1218	54	123	167/142	100	107	167/143	0.0088	0.0124	0.0114
Control W 1221‡	..	...	.....	54	113	165/139	0.0260	0.0205	0.0255
Control W 1229§	54	129	172/142	69	155	.....	0.0440	0.0270	0.0330
Control W 1228§	54	122	171/135	84	178	186/155	0.0440	0.0290	0.0580
Hyp. out W 1333	85	243	208/167	110	191	207/167	0.0091	0.0260	0.4870
Control W 1351‡	..	...	.....	85	228	200/159	0.0360	0.0470	2.9950

* The first six animals are littermate sisters; the last two are littermate brothers.
† Length of body and of tail are given in this order: body/tail.
‡ Killed at time the experiment was started in order to determine the expected gland weights at the beginning of the experiment in those animals which were allowed to survive.
§ These are controls not operated on.

THE PITUITARY SYNDROME

Hypophysectomy in the rat gives an invariable syndrome, the main features of which are: an almost complete inhibition in growth in the young animal, and a progressive loss of weight (cachexia) in the adult; an atrophy of the genital system with loss of libido sexualis, and in the female an immediate cessation of the sex cycles; an atrophy of the thyroids, parathyroids and suprarenal cortex; and a general physical impairment characterized by a lowered resistance to operative procedures, loss of appetite, weakness and a flabbiness that readily distinguishes the hypophysectomized from the normal animal.[9] It seems unlikely that they can live an average life span. A number operated on at the time of sexual maturity have died about five months later, presenting the physical characteristics which Donaldson [10] gives as

* Aided by a grant from the Research Board of the University of California, where the major part of this work was done.

1. Camus, J., and Roussy, G.: Les fonctions attribuées a l'hypophyse: Etude anatomo-pathologique, J. d. physiol. et de path. gén. **20**: 535-547, 1922.

2. Bailey, P., and Bremer, F.: Experimental Diabetes Insipidus, Arch. Int. Med. **28**: 773-803 (Dec.) 1921.

3. Roussy, G.: Les fonctions de la région infundibulo-tubé ienne et ses rapports avec l'hypophyse, Ann. d. med. **18**: 407-427, 1925.

4. Bremer, F.: Physiologie de l'hypophyse, Bull. d. l. Soc. roy. de Bruxelles, July, 1923.

5. Evans, H. M., and Long, J. A.: The Effect of the Anterior Lobe Administered Intraperitoneally upon Growth, Maturity, and Oestrus Cycles of the Rat, Anat. Record **21**: 62-63, 1921.

6. Evans, H. M.: The Function of the Anterior Hypophysis, Harvey Lecture, 1924.

7. Allen, B. M.: Experiments in the Transplantation of the Hypophysis of Adult Rana Pipiens to Tadpoles, Science **52**: 274-276, 1920.

8. Smith, P. E., and Smith, L. P.: The Repair and Activation of the Thyroid in the Hypophysectomized Tadpole by the Parenteral Administration of Fresh Anterior Lobe of the Bovine Hypophysis, J. M. Research **43**: 267-283 (June-July) 1922. The Function of the Lobes of the Hypophysis as Indicated by Replacement Therapy with Different Portions of the Ox-Gland, Endocrinology **7**: 579-591 (July) 1923.

9. Several other organs, spleen, liver and kidneys, also decrease in weight from hypophysectomy.

10. Donaldson, H. H.: The Rat, Philadelphia, 1924.

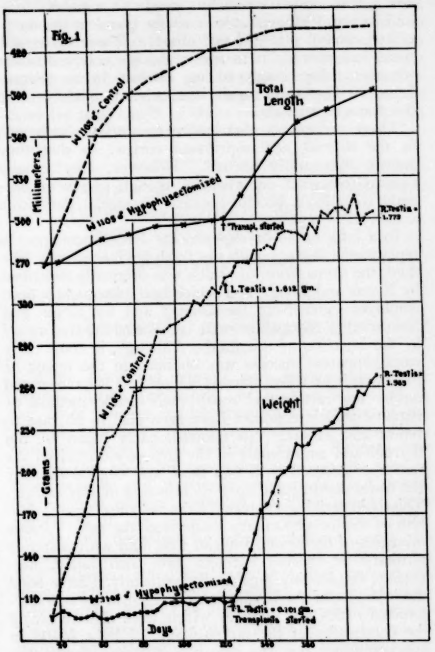
indicative of senility. It would seem that there is a premature senility, as noted by Simmonds [11] and others in clinical cases of pituitary atrophy.

A typical observation as regards the inhibition in growth and the loss in the weight of the suprarenals, thyroids and gonads when the pituitary is ablated at about the time of sexual maturity is given in table 1. It will be seen that the regressive changes in these organs are pronounced fifteen days after the operation. They are nearly maximum in thirty days, though data from other animals show that especially the suprarenals and thyroids continue to decrease in size. Structurally, the changes in these organs are well marked. The thyroid epithelium becomes greatly flattened, a change previously noted by Dott.[12] The suprarenal cortex is reduced to a narrow mantle in which it is difficult to distinguish the three zones. The medulla is slightly if any altered. If the hypophysectomy has been done before ovulation, there will be present in the ovaries interstitial tissue, normal primordial follicles, degenerating small follicles and no corpora. In the sexually mature animal, the ovarian picture is the same as in the immature rat except for the corpora, which persist for weeks after the operation. The thyroids, parathyroids and suprarenal cortex behave in the old as in the young animal.

REPLACEMENT THERAPY

Attempts carried on for the last three years to secure a successful replacement therapy have proved successful as regards all the disabilities arising from hypophysectomy only when the fresh living hypophyseal tissue was administered. This gland material, secured from adult rats, was transplanted intramuscularly. Cushing and his co-workers have reported that pituitary transplantation prolonged the life of their hypophysectomized dogs.

The response to daily transplants is immediate and striking. Within two or three days the treated dwarf



Growth rate of hypophysectomized rat before and after rat hypophysial transplants were given, and its control, not operated on: upper curve, total length; lower curve, weight.

TABLE 2.—*Response of Hypophysectomized Rat to Daily Transplants of the Rat Pituitary*

Type and Designation of Rat	Operation: Age, Days	Operation: Weight, Gm.	Operation: Length, Mm.	Transplants Started: Age, Days	Transplants Started: Weight, Gm.	Transplants Started: Length, Mm.	Necropsy: Age, Days	Necropsy: Weight, Gm.	Necropsy: Length, Mm.	Weight of Both: Suprarenals, Gm.	Weight of Both: Thyroids, Gm.	Weight of Both: Gonads, Gm.
Hyp. out BH 1376....	47	99	152/126	66	90	152/129	111	153	177/145	0.0333	0.0243	0.0514
Hyp. out BH 1375....	47	103	158/133	No transplants Left ovary = 0.016			111	90	158/136	0.0052	0.0090	0.0050 Right only
Control W 1381*.....	47	91	152/125	No transplants			111	187	196/164	0.0810	0.0610	0.0610
Hyp. out BH 1246....	54	163	186/156	66	160	186/156 Left testis = 0.594	142	242	210/174	0.0298	0.0220	1.485 Right only
Hyp. out G 1244†.....	54	163	185/155	66	155	185/155 Left testis = 0.555	142	245	211/177	0.0350	0.0200	0.181 Right only
Control G 1245*.....	54	156	177/156	Left testis = 1.291			142	336	222/190	0.0580	0.061	1.502 Right only
Control G 1243*.....	Killed at operation						54	157	182/142	0.0180	0.0250	1.907 Both testes
Hyp. out W 1105.....	36	96	155/113	125	108	165/135 Left testis = 0.101	199	268	214/178	0.0340	0.0120	1.565 Right only
Control W 1103*.....	36	95	155/110	No transplants			199	335	238/190	0.0340	Left only 0.0240	1.775 Right only
Control BH 1104*.....	Killed at operation						36	95	152/110	0.0135	Left only 0.0130	0.955

* Controls, not operated on.

† This animal, in addition to the hypophyseal transplants, received daily injections of bovine anterior fluid. It would not mate. Near the close of the replacement therapy BH 1246 and W 1105 each mated, although neither showed any interest in an estrous female at the beginning of the treatment.

assumes a normal rate of growth. In the female, estrus occurs invariably in from five to seven days, the uterus changing from its atrophic, threadlike, pale appearance to the estrua type, and examinations of this organ at later periods reveal a normal organ in either the estrous or the diestrous stage. The ovaries become usually as large as or larger than normal and show many follicles and corpora lutea. In the male the testes, which invariably become much atrophied following hypophysectomy, weighing only 0.15 Gm. or even less, will after treatment

11. Simmonds, M.: Ueber Hypophysisschwund mit tödlichem Ausgang, Deutsche med. Wchnschr. **40**: 322-323, 1914. Atrophie des Vorderlappens und hypophysäre Kachexie, ibid. **44**: 852-854, 1918; Zergwuchs bei Atrophie des Hypophysenvorderlappens, ibid. **45**: 487-488, 1919. Similar cases have been described by Balo, 1924; Benda, 1900; Fraenkel, 1916; Priesel, 1920, and Sternberg, 1920.

12. Dott, N. M.: An Investigation into the Functions of the Pituitary and Thyroid Glands, Quart. J. Exper. Physiol. **13**: 241-282, 1923.

for a few weeks increase in weight to a normal size, and be not distinguishable from the gland in the unoperated control (table 2 and chart). These males will mate and normal litters result, though previous to the treatment they displayed no interest in an estrous female. The same repair is effected in mature as in the younger animals.

These transplants also induce reparative phenomena in the thyroid and suprarenal cortex, so that they appear structurally normal. However, they usually remain somewhat underweight, though in several animals they have become normal in size. Parabiosis assists their repair.

In a long series of experiments I have attempted a replacement therapy with the fresh bovine anterior lobe fluid, the preparation of which was originally described by Evans and Long [5] and which has subsequently been employed extensively by Evans,[6] and by Evans and Simpson.[13] Normal growth is induced in the dwarf by the injection of this fluid. Although, in some early work, apparent success was obtained in the repair of the ovaries in three animals which had been operated on by my earlier and much more crude method of chromic acid injection, I have been able in no case to repeat this repair. No unquestionable repair of the thyroid and suprarenals in the hypophysectomized rat was ever secured with this fluid, and degeneration of the testes continues in spite of injection of this extract. This is in striking contrast to the response from injection of the living pituitary tissue from the rat. Various mixtures of the bovine anterior lobe fluid with posterior pituitary or thyroid extracts have also failed, uniformly, to give any repair. Subsequently, I have tried the injection of the bovine anterior fluid in hypophysectomized males and females which were also receiving the transplants of the rat pituitary. I have found in every instance that the repair of the sex glands that would have resulted from the transplantation of the living hypophyseal tissue is prevented by the injection of the bovine fluid (table 2, rat G 1244). The injection of this fluid does not prevent, however, the repair of the thyroids and suprarenals by the concurrently given transplants. This effect on the sex glands of the extract of Evans is in accord with the observations of Walker [14] in the chick, and with those of Evans and Simpson,[13] who found a reduction in the absolute weight of the testes and a diminution in the sex response of the normal rat from the injection of their bovine anterior pituitary fluid.

It has been shown that the ablation of the hypophysis in the rat invariably leads to a group of disabilities that can be either completely or significantly repaired by daily transplants of the living rat pituitary. It must be granted that the repair of a disability which (apparently) is caused by the ablation of an endocrine gland does not necessarily prove that the disability is due to the glandular deficiency. For example, in spite of the beneficial effect which posterior pituitary administration has on the polyuria that usually follows hypophysectomy, it must be admitted that this polyuria is not due to the pituitary deficiency but to a brain injury fortuitously inflicted. It cannot be denied, on the other hand, that the cure of operatively induced cretinism by thyroid administration, and the failure of this administration to prevent or cure the tetany occurring occasionally from the accidental ablation of the parathyroids, supplied almost conclusive evidence that the cretinism was due to a thyroid deficiency and that the tetany was due to some other deficiency. In general, it must be admitted that evidence gained from a replacement therapy carries great weight; it must, however, be supplemented by other evidence. I have submitted such derived from the type of operation; it would seem that this evidence in addition to that supplied by the results secured from a replacement therapy justifies me in concluding that the disorders which I have described are due to a hypophysial deficiency. My evidence may be thus summed up: 1. The pituitary is ablated by a method that leaves intact the dural membrane lying between it and the brain; the escape of cerebrospinal fluid which has been noted by various investigators in their canine hypophysectomies does not occur here, showing that the membranes of the brain remain intact; the pituitary stalk remains intact; no brain injury has been found in a careful study of serial sections. 2. The disabilities resulting from this ablation are invariable; they do not occur or are greatly modified if a fragment of the anterior hypophysis remains, though the possibility of a brain injury in such a partial ablation is as great as in a total removal; the polyuria, if present, is slight and temporary; no obesity develops, the significance of which will be shown later. 3. All the disabilities can be completely or significantly repaired by the transplantation of living pituitary substance.

It is well here also to call attention to the fact that the syndrome resulting from pituitary ablation in the rat is identical with that induced in the tadpole save as regards the enlarged fat organ constantly seen in the latter. No studies have been reported on the response of the sex gland to hypophysectomy in the tadpole. The disabilities that result from pituitary ablation in the tadpole can be cured by pituitary transplants [7] or the injection of pituitary substance.[8]

The ineffectiveness of the bovine fluid in repairing the disabilities caused by hypophysectomy in the rat was wholly unexpected. Since, as already reported,[8] this fluid repairs, in the hypophysectomized tadpole, the atrophied suprarenal cortex and thyroids, even inducing an hyperplasia of the latter gland, it was anticipated that it would be effective in the rat also. Whether the failure of the bovine hypophysial extract and the effectiveness of the fresh rat pituitary indicates a functional difference between the hypophyses of these two forms has not yet been determined. This difference cannot be due to a disparity in the age of the animals from which the glands were secured, since glands from adults only were used.

THE TUBERAL SYNDROME

The syndrome that I have induced by injury to the hypothalamic region of the brain without pituitary injury differs from that described above as resulting from hypophysectomy. The syndrome that is induced by an injury to the tuber cinereum of the hypothalamus is characterized by adiposity and genital atrophy. Casual observations have shown the presence of polyuria. The adiposity may be extreme, the animal that has been operated on exceeding by three times the weight of the normal control (table 3). Analyses made by Dr. G. L. Foster of the biochemistry department show in certain cases that 74 per cent of the total weight is fat; in most of the animals from 50 to 60 per cent of the total weight is fat. In a normal, well

13. Evans, H. M., and Simpson, M. E.: Effects of Anterior Hypophyseal Extracts on the Male, Anat. Record **32**: 206, 1926.

14. Walker, A. T.: An Inhibition in Ovulation in the Fowl by the Intraperitoneal Administration of Fresh Anterior Hypophyseal Substance, Am. J. Physiol. **74**: 249-257 (Oct.) 1925.

nourished rat, only 15 per cent or less of its total weight is fat. Sex cycles are usually present, though irregular, and atrophy of the genital system in either sex is not nearly so profound as in the hypophysectomized rat.

An injury of the tuber has not caused an atrophy of the thyroids or suprarenal cortex in any of my animals, and aside from an increased fat content they apparently display no structural abnormality. The total length of these animals may be normal, an observation in accord with that of Houssay and Hug,[15] though some skeletal dwarfing is not infrequently displayed. The tail is commonly disproportionately short and the skin is thin and delicate, characteristics that indicate infantilism.

With both a pituitary and a tuberal injury, there is a combination of the two syndromes giving, if the operation was performed on a young animal, the adiposogenital syndrome of Fröhlich, a syndrome that was displayed in most of the animals of Ascoli and Legnani,[16] Aschner,[17] Crowe, Cushing and Homans,[18] Bell,[19] Dott [12] and others. The injection of bovine

TABLE 3.—*Effect of a Lesion of the Tuber Cinereum* *

Type and Designation of Rat	At Operation			At Necropsy					
	Age, Days	Wt., Gm.	Length, Mm.	Age, Days	Wt., Gm.	Length, Mm.	Weight of Both Suprarenals, Gm.	Thyroid, Gm.	Ovar. or R. only, Gm.
W 56†	42	112	157/128	443	840	221/175	0.0798	0.0246	0.0154
W 55‡	42	115	168/133	433	299	220/191	0.0601	0.0232	0.0875

* Sex cycles in the animal operated on (W 56) were present but were irregular and usually showed a prolonged cornified stage.
† Operated on.
‡ Control, not operated on.

anterior pituitary fluid in these fat animals has no effect on the adiposity and sex organs, though skeletal growth is stimulated. Since the injection of this fluid does not repair the thyroids, suprarenals and sex glands in the hypophysectomized rat, its failure to repair the disabilities of the tuberal syndrome gives no proof that the administration of a potent pituitary substance would be ineffective.

SUMMARY

1. Hypophysectomy produces an invariable and characteristic syndrome in the rat, the chief features of which are an inhibition in growth in the young animal or a loss of weight in the mature animal, atrophy of the thyroids, suprarenal cortex and sex organs, weakness and cachexia. The animal survives for months.

2. The disabilities arising from hypophysectomy can be completely or nearly completely cured by daily pituitary homotransplants. Intraperitoneal injections of saline extracts (suspensions) made from ox pituitaries prepared by the method of Evans and Long do not repair the atrophied thyroids or suprarenal cortex; and these injections not only do not repair the atrophied sex organs but prevent their repair by the pituitary transplants. Skeletal growth is stimulated by injection of the bovine fluid.

3. A lesion of the hypothalamic region of the brain (tuber cinereum) gives rise to a syndrome which is distinct from that caused by pituitary ablation. This tuberal syndrome is characterized by extreme obesity and an atrophy of the genital system; neither the thyroids nor the suprarenal cortex atrophy. In certain cases the total length of these animals may be reduced; in other cases it is unaffected.

15. Houssay, B. A., and Hug, E.: Influence des lesions infundibulo-hypophalamiques sur la croissance, Compt. rend. Soc. de biol. **85**: 51-53, 1923.
16. Ascoli, G., and Legnani, T.: Die Folgen der Extirpation der Hypophyse, München. med. Wchnschr. **59**: 518-521, 1912.
17. Aschner, B.: Ueber die Funktion der Hypophyse, Arch. f. d. ges. Physiol. (Pflüger's) **148**: 1-146, 1912.
18. Crowe, S. J.; Cushing, H., and Homans, J.: Experimental Hypophysectomies, Bull. Johns Hopkins Hosp. **21**: 126-169, 1910.
19. Bell, W. B.: Experimental Operations on the Pituitary, Quart. J. Exper. Physiol. **11**: 77-126, 1917.

THE SYMPTOM COMPLEX RESEMBLING HYPERTHYROIDISM WITHOUT INCREASED METABOLISM

PRELIMINARY REPORT *

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While Daly and one of us [1] were studying the thyroid during pregnancy, we became interested in our office practice in the frequent occurrence of the clinical syndrome resembling mild hyperthyroidism without changed basal metabolic rate. Patients presenting this group of symptoms were usually seen in office practice and practically never in hospital wards. The clinical picture presented by these patients was similar to if not identical with the syndrome long known and described by various authors under the names of irritable heart, effort syndrome, neurocirculatory asthenia, autonomic imbalance and sympathicotonia.[2] They also closely paralleled some of the cases described by Miller [3] in his study of mild hyperthyroidism. Almost all the patients had goiters, for which reason we decided to use iodine therapeutically. Results more than vindicated this practice. None of the patients used in this study had shown abnormal metabolic rates. We nevertheless thought that by the use of iodine the metabolic rates of our group of patients with goiters might be changed. In other words, it was conceivable that in the wide range allowed for "normal metabolism" there might be included a group susceptible to change by iodine.

Work along these lines is not yet complete: the present communication is a preliminary report. Of approximately fifty cases, thirty-two have been carried through long enough to permit of analytic study; twenty-three of these patients were females and nine, males; nineteen were between 20 and 30 years of age; six, between 31 and 40, and seven, between 41 and 45, showing a predominance of females in the third decade. The symptoms varied greatly; some complained of being "nervous" and came for a general examination; others complained of indefinite gastro-intestinal symptoms, dizziness, sleeplessness, lack of energy, palpitation, excitability and irritability, headaches, various vasomotor disturbances, menstrual disorders, and a few, of loss of weight. Usually two or more of this group of symptoms were combined in one patient. Statistical analysis of symptoms in such a small group unquestion-

* Read before the Chicago Society of Internal Medicine, Nov. 22, 1926.
* From the Medical Department and the Otto Baer Fund for Clinical Research of the Michael Reese Hospital.

1. Strouse, Solomon; and Daly, P. A.: Thyroid During Pregnancy, J. A. M. A. **84**: 1798-1800 (June 13) 1925.
2. Brooks, H.: Neurocirculatory Asthenia, Ann. Clin. Med. **3**: 11-24 (July) 1924. Kessel, Leo; and Hyman, H. T.: Studies of Graves' Syndrome and the Involuntary Nervous System, Am. J. M. Sc. **165**: 513-530 (April) 1923.
3. Miller, J. L., and Raulston, B. O.: The Recognition of Mild Hyperthyroidism, J. A. M. A. **79**: 1509-1511 (Oct. 28) 1922.

ably gives the wrong impression; however, it might be of interest to note that twenty-one patients complained of being "nervous"; thirteen had gastro-intestinal symptoms; ten, tachycardia; nine, lack of energy or pep; seven were excitable or irritable, and seven could not sleep; the other symptoms were of minor importance numerically.

On physical examination all of the thirty-two patients showed a pulse of 88 or above, and eighteen, 100 or above. The systolic blood pressure was above 125 in twenty-three instances, above 135 in sixteen instances, and above 145 in thirteen. In three patients, aged 22, 30 and 37, it reached 160. Seven of the sixteen patients with pressures above 135 were aged 35 or older, but the average pressure for this group was 147 and the average age was 33. Analysis of the systolic blood pressures indicates that the average for this group is elevated. On the whole, the diastolic remained unaffected, the pressure in twenty of the thirty-two being between 70 and 80. Marked and rapid fluctuations in the systolic pressures were rather characteristic, which would indicate that the blood pressure changes in this group were vasomotor in origin.

The thyroid was enlarged in twenty-seven cases. This enlargement was almost always of a diffuse nature and rarely were adenomas of the thyroid felt. This incidence (twenty-seven out of thirty-two) of goiters is higher than the average Chicago office practice and decidedly higher than the incidence of three goiters in a series of twenty-nine normal controls.

Tremor was present in twenty, almost always of a fine character; reflexes were markedly increased in sixteen and there were some one or more eye signs in twelve. Careful physical examination was made in all cases to exclude other evidences of disease processes, but intricate and detailed search for hidden foci of infection was not a routine procedure. Here, then, is a symptom complex of goiter, tachycardia, nervousness, vasomotor instability, a tendency to increased blood pressure, tremor and other signs and symptoms of disturbance of the sympathetic nervous system. Yet in not a single case studied was the basal metabolic rate beyond the limits of minus 12 to plus 10. This observation is in harmony with all the previous reports on this syndrome.

Observations on the use of iodine therapeutically in these cases had not come to our notice when we first began our study. Iodine was being used freely in the treatment of simple goiter [4] and as an aid in the surgical handling of cases of exophthalmic goiter.[5] Much certainly has been accomplished by the use of iodine, but at present the exact rôle it plays in the body economy and its exact relation to thyroid metabolism are not thoroughly understood. If our present conception of states of thyroid activity as embraced in the terms "hypo" and "hyper" thyroidism is correct, it is difficult to understand just how iodine relieves the symptoms of both conditions.

The experiment of treating these patients with iodine was suggested by the excellent results obtained by Daly and Strouse in the pregnancy cases. We realized fully the great difficulty attached to any experiment necessitating deduction from therapeutic procedure, and the especial difficulty encountered when dealing with individuals of such marked vasomotor instability. We conscientiously endeavored to remove all psychotherapeutic suggestions; when we prescribed iodine we were pessimistic about the results, and the patients were not given any clue as to what might be expected. The general public in Chicago is so wise about iodine that we even attempted to hide the compound solution of iodine (Lugol's solution) in an inert vehicle, so that the proper dose in minims was taken in a teaspoon of the mixture. Other treatment was absolutely not prescribed, and changes were not made in the patient's method of living or in his habits. We employed this solution in considerably more cases than we are able to report on, as many patients did not return for subsequent observation. Of twenty-eight patients seen from the start to the finish of iodine medication, twenty-four were relieved of symptoms and twenty of the signs already described. The symptomatic relief usually was rapid—within the first few days. Enough patients have been observed for from one to two years to offer control comparisons with other methods of treatment. The pulse, as in the pregnancy series, usually did not return to normal as quickly as did the subjective symptoms, but the blood pressure usually dropped and remained more constantly at a lower level. It was not unusual for patients who had been ill for a long time to write or telephone to the office after a short course of iodine that the symptoms were so completely relieved as to make subsequent visits unnecessary. We will cite just one case as an example.

M. H., a married man, aged 30, seen, Nov. 6, 1925, complained of heartburn, indefinite body pains, gastro-intestinal symptoms, nervousness, dizziness, insomnia and loss of weight, all of nine months' duration. The positive conditions found on examination were: enlarged thyroid, a pulse rate of 92, a systolic blood pressure of 160, a diastolic of 80, considerable nervousness, slight tremor and exaggerated reflexes. The basal metabolic rate was minus 10.3. Compound solution of iodine, 15 minims (1 cc.) daily, was given for ten days, at which time the patient said that all his symptoms had disappeared. The pulse was 80, the blood pressure, systolic, 120, diastolic, 60, and he had begun to gain weight. Iodine treatment was then stopped and December 1, the basal metabolic rate was minus 14.1. In February, 1926, the patient had gained from 20 to 25 pounds (9 to 11 Kg.); he was feeling fine and physical examination was negative. This patient had been under treatment from February to November, 1925, by competent men and was steadily growing worse. Nov. 23, 1926, he was again seen, and was to all intents a well man.

We do not believe we are going beyond the limits of scientific precision when we state our belief that iodine, acting so quickly and so completely, perhaps acted as a specific. We could give other similar reports and we could likewise mention patients who had been under our care for several years before iodine had been administered. The latter patients are particularly interesting because they act as controls. Two patients in our series are of particular interest in demonstrating a possible influence of the iodine on other ductless glands. One, a young married woman with a history of dysmenorrhea of years' duration and inability to become pregnant consulted us because of nervousness, loss of energy and irritability. On physical examination we found an enlarged soft thyroid tachycardia, and a fine tremor. Pelvic examination was negative. Believing that the symptoms were due to a psychic reaction following her inability to become pregnant, we prescribed compound solution of iodine with a definitely expressed doubt as to its value. However, the usual rapid response in subjective symptoms followed, and much to the patient's surprise, her next menstrual period was normal. Within the following month she became preg-

4. Marine, David: Etiology and Prevention of Simple Goiter, Medicine 3:453-479 (Nov.) 1924.

5. Plummer, W. A.: Iodine in the Treatment of Goiter, M. Clin. N. Amer. 8:1145-1151 (Jan.) 1925.

nant. Of course, this case and the other similar one may represent mere coincident happenings. On the other hand, they may be important as indicating a future line of study and therapy.

After a short while we formed an impression that whatever the nature and the cause of this complex might be, it was associated with iodine metabolism and was relieved by the action of iodine. Despite the fact that the basal metabolic rate was in every case within the limits of acknowleded normal, we conceived the possibility that the metabolism of these patients might show changes after iodine administration which would distinguish them from normal persons.

TABLE 1.—*Effect of Iodine Treatment on Normal Controls*

Subject	Sex*	Age	B. M. R. 1	B. M. R. 2
1	♂	28	+ 4.3	+ 7.8
2	♀	25	+ 8.8	+ 7.0
3	♂	25	— 2.6	— 9.4
4	♀	23	— 3.6	— 5.8
5	♂	24	— 4.9	— 8.2
6	♀	24	—13.5	—14.8
7	♀	26	— 2.5	— 9.7
8	♂	28	—11.0	—19.9
9	♂	31	± 0.0	— 5.2
10	♂	29	+ 8.1	— 6.0
11	♂	22	— 6.2	—12.7

* In this column, ♂ indicates male; ♀, female.

TABLE 2.—*Basal Metabolic Rate Eight Days Later on Second Series of Normal Persons Not Receiving Iodine*

Subject	Sex	Age	B. M. R. 1	B. M. R. 2
13	♀	20	+ 2.1	—13.0
14	♀	20	+11.7	+12.8
15	♀	19	— 6.6	—15.4
16	♀	21	— 5.1	— 6.0
17	♀	21	— 3.9	— 7.9
18	♀	26	— 7.7	+ 5.4
19	♀	20	+11.3	+ 6.7
20	♀	20	— 7.6	+ 5.7
21	♀	20	—12.9	+13.4
22	♀	19	— 4.5	—10.7
23	♀	24	+ 1.4	— 9.2
24	♀	23	+ 7.7	— 5.9
24	♀	19	— 8.5	— 7.9

TABLE 3.—*Basal Metabolic Rates on Third Series of Control Receiving Iodine for One Week*

Subject	Sex	Age	B. M. R. 1	B. M. R. 2	B. M. R. 3
25	♂	29	—21.0	—10.5	—27.6
26	♀	23	—21.0	—16.8	—28.7
27	♂	25	+ 8.1	—13.2	—13.1
28	♂	25	— 2.0	— 8.3	— 6.8

Since the effect of iodine on normal metabolism had not been sufficiently studied, we selected for preliminary study a series of normal controls; healthy nurses and interns were chosen, the resting metabolism taken, compound solution of iodine administered in the same dose and for the same period of time as was being employed with patients, and the metabolism again determined at the end of eight days. In a series of twelve such persons, almost all showed a second reading following administration of the iodine lower than the first. That this was not an iodine effect was proved by another control series of thirteen persons, on whom the second reading was done eight days after the first but without any iodine. In this series again practically all showed a lower second reading. This was to be expected as a result of training the person to the use of the machine. Finally, in a third series of four normal persons with two basal metabolic rate determinations one week apart and compound solution of iodine (100 minims [6 cc.] for one week), a third reading did not show any effect of iodine on the basal metabolic rate. These experiments prove that iodine in small therapeutic doses does not change the basal metabolic rate of normal persons.

Table 4 gives our report on nine patients of the group with two or more metabolic readings. In this group of nine patients, compound solution of iodine, 15 minims (1 cc.) daily for one week, did not noticeably change the metabolism.

A final experiment has been planned to test the tolerance of the patients in this group to larger doses of iodine in comparison with the tolerance of normal persons. It is conceivable that if we are dealing with an iodine deficiency disease and if iodine has any relation to the basal metabolic rate, excessive administration of iodine to these patients might produce changes in the basal metabolic rate. This phase of the work is still unfinished, but we are able to give a few comparative readings.

TABLE 4.—*Basal Metabolic Rates in Special Group of Nine Controls Receiving Iodine*

Subject	Sex	Age	B. M. R. 1	B. M. R. 2	B. M. R. 3
29	♀	31	—13.0	+ 8.0	+ 4.5
30	♂	24	+ 2.9	— 2.4	+ 5.7
31	♀	24	+10.7	+ 7.0	+11.4
32	♂	21	+ 3.5	+ 1.3	— 6.4
33	♀	19	— 7.4	.....	— 5.5
34	♀	30	+ 1.5	+14.3	+ 3.9
35	♀	37	+ 4.3	.....	+ 3.0
36	♀	28	— 5.0	.....	+ 6.0
37	♂	30	—11.3	.....	—14.1

TABLE 5.—*Attempt to Change Basal Metabolic Rate by Forced Iodine Feeding*

Normals	Sex	Age	B. M. R. 1	B. M. R. 2	Compound Solution of Iodine, Cc.	B. M. R. 3	Compound Solution of Iodine, Cc.
38	♂	23	— 9.3	— 7.7	....	—11.3	17.5
39	♀	20	—16.3	—15.2	17.5	—15.5	25.0
40	♂	24	—17.5	—23.7	12.5	—26.6	21.25
Goiter Cases							
41	♀	36	+ 5.7	+ 4.3	13.1	.....	...
42	♀	20	+ 3.6	— 4.5	11.0	+ 5.7	19.0
43	♀	19	— 4.7	+ 2.3	17.5	+ 6.9	27.5

COMMENT

We have presented a series of patients with the symptom complex closely resembling so-called hyperthyroidism without changes in the basal metabolic rate. This complex has been known for some time under various names, but except for one report made during the course of this study, these patients have not been treated with iodine. We have, and we believe the results of such treatment justify, the opinion that the symptoms and signs of this complex are associated with iodine deficiency. Iodine medication failed to change the basal metabolism. Martin [6] described fourteen similar cases in children between 7 and 18 years of age. In Martin's cases, as in our series, iodine medication relieved the symptoms but did not affect the basal metabolic rate. Our cases are from a "goiter area."

These are the facts. Any attempt at explanation immediately carries one into the field of speculation. If we are dealing with cases of iodine deficiency, are such cases for that reason cases of disturbed thyroid function? Our knowledge of iodine metabolism favors the thought that iodine is linked up with thyroid function and suggests that our results indicate mild and perhaps transitory disturbances of the thyroid. On the other hand, previous observation by other students [7]

6. Martin, Kirby: Symptoms Associated with Iodine Deficiency in Simple Goiter, Am. J. M. Sc. **172**: 237 (Aug.) 1926.

7. J. L. Miller, in discussing this paper, cites two examples of similar conditions in patients who subsequently developed more marked symptoms and showed increased basal metabolic rate.

of cases similar to ours has shown that practically none develop into toxic goiter.[8]

Nevertheless, it is easily possible to conceive of this group of cases as temporary thyroid disorders, not necessarily classified as either hypothyroidism or hyperthyroidism. We know that the thyroid enlarges at certain periods of life apparently to meet changed conditions; for example, puberty. Martin's cases at puberty showed the anomaly of temporary symptoms similar to the accepted present day interpretation of hyperthyroidism. But in view of results such as ours and Martin's and in view of the apparently paradoxical effect of iodine in both simple and toxic goiter, perhaps our interpretation of thyroid symptomatology needs revision. It is indeed possible that the term "hyperthyroidism" is an incorrect one, and that in states such as those we have studied we are really dealing with some other form of disturbed thyroid function.

Must we assume that a changed basal metabolic rate is an absolute, essential indicator of thyroid disease? Clinical observations of patients with exophthalmic goiters frequently show that not all of the symptoms of the disease correspond in severity. The basal metabolic rate does not always bear a direct relation to the various nervous symptoms that are so characteristic of the disease. It is true that iodine therapy relieves the nervous symptoms and lowers the basal metabolic rate, but as yet evidence is lacking to prove whether the effect on the basal metabolic rate is direct rather than secondary. Even postoperative results are not always parallel; in some cases the lowering of the pulse rate or of the metabolism is not accompanied by disappearance of all other signs and symptoms of the disease. Sturgis [9] showed that iodine did not affect the symptoms produced by thyroxin overdosage in normal persons, and Carlson [10] says that animals made hyperthyroid by thyroid feeding are uninfluenced by iodine medication. We cannot help considering whether the thyroid has a diphasic function; one controlling the metabolism, one linked up with the nervous system. If this is so, cases such as ours need not be thrown out of the thyroid realm because of normal metabolism.

At the present time we shall certainly not offer a conclusion from this study. The suggestion is offered that the condition may be one of disturbed thyroid function. Probably it does not represent a true primary clinical entity, but it may be a secondary functional manifestation of disease processes elsewhere in the body. All the speculations advanced in this paper are open for argument, some for subsequent experimental proof.

104 South Michigan Avenue.

8. Grant, R. T.: After Histories of Men Suffering from Effort Syndrome, Heart **12**: 121-142 (June) 1925.

9. Sturgis, C. C.; Zubrian, S.; Wells, G. W., and Badger, T.: Effect of Iodine by Mouth on the Reaction to Intravenous Injections of Thyroxin, J. Clin. Investigation **2**: 289-298 (Feb. 20) 1926.

10. Carlson, A. J.: Personal communication to the authors.

What Is Disease?—What we call disease is the response of the organism to the invasion of the agents of disease, and, seeing that no two individuals are exactly alike either in structure or in chemistry, sickness does not conform to any single model; each individual case calls for careful observation. Owing, as I believe, to their chemical individuality, different human beings differ widely in their liability to individual maladies, and to some extent in the signs and symptoms which they exhibit. Hence it will be found a useful maxim that there is no such word as "never" in medicine. Rules which appear to be immutable turn out to have their exceptions.—Garrod, Archibald: *Lancet* **2**:736 (Oct. 9) 1926.

THE USE OF RADIUM IN INTERNAL MEDICINE

FURTHER EXPERIENCES *

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About fifteen years has elapsed since radium came into prominence in medicine. In the beginning, it was heralded by certain leaders of medicine in Germany and Austria as a remedy of great value for rheumatism, gout, arthritis, neuritis, neuralgia, and the lancinating pains of tabes dorsalis. The prominence of these writers made the claims quite convincing. The clinics of both von Noorden and His, regarded by all as among the leading medical services of Europe, intimated that the introduction of radium would mark the beginning of a new era in therapeutics. The chief claims made for radium were that it relieved pain, that it activated enzymes, and that it reduced blood pressure.

At this time it was administered largely in the form of radon (emanation). The "sipping cure" was in vogue generally, while in some of the larger centers "emanatoriums" were built wherein from ten to twenty patients could be treated at one time by the inhalation method. Subsequently, small emanators were devised which yielded activated water for drinking purposes. These have been advocated particularly for use in the home.

In this country, in 1913, Rowntree and Baetjer presented the results of their studies in the Johns Hopkins Hospital with radon administered by the so-called sipping method. The clinical results were distinctly disappointing, but because the series of cases was small and because of the excellent results reported in the European clinics, they felt that the treatment should be given further trial. An attempt was also made to determine its value as an activator of ferments, and Rowntree and Marshall, in a study of its effect on enzymes, reported that they could find no basis for the contention that it accelerated ferment activity, at least so far as lipase was concerned.

Fifteen years ago the literature was flooded with optimistic reports on the use of radium in medicine. These reports ceased rather abruptly, and during the last ten years little has been written on the subject except by those directly or indirectly concerned commercially. During the intervening years radium has been employed sporadically in the treatment of various diseases, particularly arthritis, neuritis and hypertension, and more recently thrombo-angiitis obliterans (Buerger's disease). Although striking results have been observed on rare occasions in cases of hypertension and arthritis following the use of radium by the so-called sipping cure, the method has dropped into complete disuse and has been replaced by a more certain procedure, the intravenous administration of the soluble salts of radium. However, in most cases, even with this method, results have been meager, transient or entirely negative. Radium treatment is now rarely employed in our wards in spite of the fact that it always can be had on request.

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RESPONSE OF HYPERTENSION TO RADIUM CHLORIDE

Radium chloride was given thirty-seven times to twenty-two patients suffering from hypertension. The condition of five of these was diagnosed malignant hypertension, and of seventeen, benign hypertension. Of the group of benign cases, nine were classified as mild and eight as severe. The dosage of radium chloride varied from 10 to 50 micrograms, but 10 and 25 micrograms were most frequently used. Except in one case, it produced no untoward results. In this instance sweats and diarrhea occurred, associated with dysuria, all of which disappeared in the course of two or three days. Sensations of bodily warmth, of flushed skin, and of somnolence for a day or two following the injection were common.

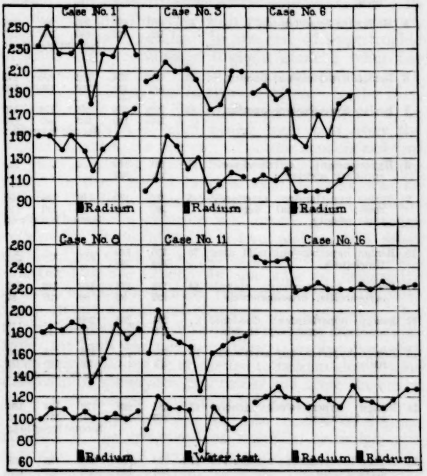
All the patients with hypertension were subjected to the routine of our wards in the management of hypertension. The blood pressure was recorded in the clinic and again on admission to the hospital. All the patients were put to bed for the first three days and during the special tests. During the first three days no medicine was given, but the blood pressure was recorded three times a day. The final reading of the series was regarded as the resting level. Such a preliminary period is essential in order to determine accurately the effects of drugs on blood pressure. As will be seen from table 1, the readings in all but one of the seventeen cases of benign hypertension were lower after these days' rest than on admission, the fall being evident in both the systolic and the diastolic pressures. The average fall was 30 mm., but in some instances exceeded 50 mm.

As the next step, routine tests with phenobarbital (luminal), sodium nitrite, and "hypertensive" baths were made. For the phenobarbital test and the nitrite test one-half grain (0.03 Gm.) of the drug is given every half hour for six doses, the blood pressure being taken before the first dose, after the third and sixth doses, and one and two hours after the final dose. The hypertensive bath consists of immersion from five to fifteen minutes in water at a temperature of 105 F. The pressure readings are taken before and during the bath, and one hour later. These three tests yield information invaluable from the standpoint of comparison with the results of radium chloride. Obviously, if the radium chloride is no more effective than nitrites or phenobarbital administered by mouth, the latter are to be preferred in treatment. From such studies it is evident that radium chloride unquestionably does lower blood pressure in many instances, but that its action is transient, in fact more so at times than that of nitrites or phenobarbital.

In these twenty-two cases the response to the administration of radium was definite in only five (cases 1, 3, 6, 8 and 16). Case 1 was malignant hypertension with cardiac insufficiency and myocardial degeneration. As expected in malignant hypertension, the response to rest and sodium nitrite was very slight. Following the injection of radium chloride, there was a moderate drop in systolic and diastolic pressure, followed by a rapid rise. Although the pressure readings on dismissal were markedly lower than before the use of radium, it is not certain that this fall can be attributed to radium; at least it is out of harmony with the other readings recorded for five days following injection of radium. Moreover, the patient did not improve clinically after dismissal, and died from the sequelae of hypertension.

In case 3, also of malignant hypertension, the regular regimen was dispensed with because of the urgent need for treatment. The response to the warm bath was marked. Following the first injection of radium, a fall in blood pressure occurred, but it was too transitory to appear with the routine method of charting. The second dose of radium was larger and was followed by a definite response, as indicated in the chart. The return of hypertension, however, was rapid, and on the second day following the injection the systolic reading had returned to its former level, while the diastolic reading was still slightly reduced.

Case 6 was benign hypertension associated with obesity. Following the injection of radium chloride, there was a lowering of 25 mm. of mercury in both the systolic and the diastolic pressure. The systolic reading returned to the former level in three days and the diastolic, although showing a tendency to rise, was still from 10 to 25 mm. lower at dismissal six days after the injection of radium chloride.



Blood pressure response to radium chloride.

In case 8 the diagnosis was benign hypertension with arteriosclerosis. The response to rest was marked, and following the injection of radium there was a pronounced fall in systolic pressure, which, however, rose and attained its former level on the following day. Case 16, severe benign hypertension, responded little to rest, but showed a gratifying response to radium chloride. On the third day of rest, 25 micrograms of radium chloride was given, and the following day the systolic reading was almost 20 mm. lower, but the diastolic pressure was unaffected. This persisted, and on the fourth day a second dose of 25 micrograms of radium was given, with no further lowering, but the new systolic level persisted for seven days at a level 20 mm. lower than before radium was given; at this time the patient was dismissed from observation.

Although, under the regimen outlined here, variations in blood pressure following the use of drugs can usually be attributed to the effect of the drug given, this is not invariably so. Case 11 represents such a condition, and the chart shows a transient but gratifying fall in both systolic and diastolic pressures. It corresponded so

TABLE 1.—*Effect of Radium on the Blood Pressure in a Controlled Group of Cases of Hypertension*

Case	Diagnosis	Age, Years	Blood Pressure: On Admission	Blood Pressure: Resting Level	Blood Pressure: After Nitrites	Blood Pressure: After Phenobarbital	Blood Pressure: After Warm Bath	Blood Pressure: Before Radium	Blood Pressure: After Radium	Blood Pressure: On Dismissal	Amount of Radium Given, Micrograms	Days of Observation After Use of Radium	Number of Days in Hospital	Comment	Summary of Value
1	Malignant hypertension; cardiac insufficiency; myocardial degeneration	37	275 100	250 150	226 144	... ...	... ...	234 145	180 118	210 118	10	5	11	Temporary drop	None
2	Malignant hypertension; myocardial degeneration; cardiac decompensation	43	270 165	250 150	202 116	... ...	204 116	210 132	214 110	218 125	10 45	.. 4	.. 12	Less response than to nitrites..	None
3	Malignant hypertension	43	220 125	... ...	... ...	... ...	150 94 Second injection:	180 100 208 130	188 114 170 100	... ... 210 110	10 25	5 5	17 ..	Some fall after second injection but rapid return	None
4	Malignant hypertension; myocardial degeneration; arteriosclerosis	34	250 150	... ...	234 138	184 134	196 140	248 158	200 120	238 130	25	6	..	Temporary response only; not as good as phenobarbital	None
5	Malignant hypertension	42	210 138	220 130	200 160	202 150 Second injection:	192 150	192 160 190 140	212 190 180 110	... ... 190 110	10 10	4 16	27 ..	Low diastolic pressure at dismissal followed protein shock	None
6	Benign hypertension; obesity....	46	226 140	204 134	172 116	190 130	200 140	188 125	150 100	180 100	10	6	17	Persistent decreased diastolic pressure of 25 mm.	Slight
7	Benign hypertension; obesity....	41	220 140	220 140	168 100	170 90 Second injection:	176 110	224 116 218 108	158 100 180 110	... ... 200 110	10 25	4 6	24 ..	Some temporary but no permanent drop; less response than to phenobarbital or nitrites	None
8	Hypertension; arteriosclerosis; coronary sclerosis	51	224 126	180 100	... ...	... ...	... ...	192 82	138 100	160 106	10	3	8	Fall in systolic pressure of 32 mm.	None
9	Benign hypertension; arteriosclerosis; myocardial degeneration; obesity	48	232 140	170 118	148 92	184 110 Second injection:	170 110	200 120 220 128	170 110 170 120	... ... 196 120	10 25	6 8	.. 17	Temporary response only.....	None
10	Benign hypertension; mild arteriosclerosis	56	155 105	139 99	... ...	... ...	136 106	144 90	156 90	... ...	10	3	10	No response	None
11	Benign hypertension; chronic myocarditis; arteriosclerosis	54	188 120	176 80	138 90	146 98	150 80	164 110	126 70	170 100	10	6	9	Temporary fall	None
12	Benign hypertension; duodenal ulcer with secondary anemia	..	254 128	200 100	200 110	... ...	... ...	230 120	200 118	230 110	10	6	16	Temporary response	None
13	Benign hypertension; arteriosclerosis	70	200 110	... ...	158 96	174 120 Second injection:	170 90	200 100 222 100	176 100 145 100	... ... 200 110	25 25	3 3	.. 16	Temporary fall	None
14	Benign hypertension; general arteriosclerosis	43	208 166	238 166	170 110	176 110 Second injection:	186 110	162 106 170 108	162 108 152 110	... ... 160 120	25 10	3 5	.. 18	Good response to rest, nitrites, and phenobarbital; radium lowered pressure no further	None
15	Benign hypertension; myocardial degeneration	47	220 165	190 115	158 106	175 125 Second injection:	158 108	180 100 234 140	140 100 184 128	... ... 200 110	10 25	4 5	.. 18	Temporary drop	None
16	Benign hypertension (severe form); arteriosclerosis; cardiac decompensation	53	270 125	238 115	... ...	... ... Second injection:	... ...	250 120 220 120	218 118 210 118	... ... 220 122	10 25	2 7	.. 12	Systolic pressure lowered 20 mm. for time of observation	Slight
17	Benign hypertension; coronary sclerosis; endarteritis obliterans	61	240 140	210 115	... ...	... ... Second injection:	... ...	210 110 238 128	200 120 220 108	... ... 200 110	10 25	4 7	.. 18	Slight response	None
18	Benign hypertension (severe form)	59	240 140	186 104	140 78	160 78	180 98	170 100	152 110	170 110	10	6	18	Response questionable; not as good as nitrites	None
19	Benign hypertension (severe form); myocardial degeneration	41	218 118	190 110	146 96	144 90 Second injection: Third injection:	136 94	190 128 192 120 200 120	160 80 172 120 140 80	... ... 190 120	10 25 50	4 5 2	 16	Good temporary response after first and third injections	None
20	Benign hypertension (severe form); arteriosclerosis	47	230 150	180 128	130 90	164 110 Second injection:	154 110	186 108 188 120	176 110 170 120	... ... 160 90	10 25	4 2	.. 16	Last reading low but not in keeping with others; questionable response	None
21	Benign hypertension (severe form); cardiac hypertrophy; myocardial degeneration	23	214 160	168 110	164 130	... ... Second injection: Third injection:	186 140	206 150 210 145 220 140	182 136 186 130 180 142	... ... 200 138	10 25 50	5 4 6	 17	Temporary response	None
22	Benign hypertension (severe form)	28	220 108	168 118	156 86	180 94 Second injection:	196 100	206 96 218 100	164 70 200 98	... ... 188 100	10 25	7 6	.. 14	Fall in diastolic pressure but quick return	None

well to the other results following the use of drugs that it was thought from the chart to be due to radium; on investigation, however, it was found that no drugs had been given on this or the preceding day. On this day the only treatment was a dilution test, which consists of the ingestion of 1,500 cc. of water. Such aberrations in blood pressure charts are, of course, not unusual, especially in cases of benign hypertension. In view of this, it is evident that in hypertension one must be extremely wary in interpreting the therapeutic results of radium chloride or, for that matter, any other form of treatment.

On analysis of the results shown in table 1, the response of hypertension to rest alone is very striking, and it is evident that care must be taken to obtain a true resting level before medication is undertaken, if we are to evaluate properly the effect of the therapeutic agent. The chart and table 1 show that radium chloride given intravenously does reduce the blood pressure in hypertension, but usually that this response is not greater than, and is as transient as, that obtained following the use of ordinary vasodilating drugs such as sodium nitrite and phenobarbital. In many instances our results were so fleeting that they were not evident in the ordinary recording process, but appeared only in the special records in which hourly readings were taken following the administration of radium chloride. In five cases there was definite lowering of the blood pressure, but in only two were the results more than temporary. Some of the readings at dismissal were higher or lower than before radium was given, but single readings were not considered significant unless they were in keeping with the readings on previous days.

RADIUM CHLORIDE FOR THE RELIEF OF PAIN

Many forms of chronic pain are encountered in practice. Because of this very chronicity, care must be exercised in the use of opiates and other habit-forming drugs. Even opiates in large amounts may fail to bring complete relief. Especially is this true in cases of thrombo-angiitis obliterans, in which the pain is a serious problem because of its severity and chronicity. In many instances even mild trophic ulcers precipitate continuous and unbearable distress, which may prevent sleep for weeks and may result in the complete exhaustion of the patient. Opiates give little or only temporary relief. Day after day, and night after night, these unfortunate patients sit up rocking back and forth in bed or in an armchair, rubbing the painful member and constantly changing its position. They gradually lose weight and become pale, hollow-eyed and wan. Their ability to withstand pain is reduced, their morale is shattered, and they beg for relief at any cost, which usually means amputation. The trophic ulcers are innocent enough in appearance, and were it not for this pain the immediate outlook would not be so grave. It is in this type of pain that the results with radium have been most gratifying.

The drug was administered for the relief of pain thirty-nine times in twenty-eight cases of various types. The dosage varied from 10 to 50 micrograms, 25 micrograms being the dose most commonly used. The relief from pain was graded on a basis of from 1 to 4, grade 1 being from 0 to 25 per cent relief, grade 2 from 25 per cent to 50 per cent, grade 3 from 50 per cent to 75 per cent, and grade 4 from 75 per cent to complete relief. Obviously, the degree of relief was necessarily based on the statement of the patient. Relief in those cases graded 1 is questionable, because of the psychic response to the knowledge that radium has been administered.

Twelve cases of thrombo-angiitis obliterans were treated. In one case, four injections of 25 micrograms each were given, with no relief following the first and last injection, and questionable relief of short duration following the second and third. In four other cases relief, grade 1, was obtained; in one of these two injections were given. In each instance, however, relief was of short duration. In two cases, relief was graded 3 for six days. In the remaining five cases there was almost complete relief for from six to fourteen days after a single injection. Thus, in seven out of twelve cases of thrombo-angiitis obliterans there was marked or complete relief from single injections of radium chloride. In the other five cases there was little or no response.

Radium was used also in a miscellaneous group of cases. Two cases of endarteritis obliterans, one with claudication and the other with rest pain, were treated, with questionable results. In one case of hypertrophic arthritis with neuralgia, it brought grade 1 relief for an indefinite period. In two cases of diabetes with neuritis, two injections each were given. In the first, grade 2 relief for six days followed each injection; in the other, grade 3 relief lasted four days after the second injection. In one case of sciatic neuritis and two of pruritus vulvae, grade 1 relief lasted an indefinite time. In one case of brachial neuritis there was no relief. Of three cases of chronic infectious arthritis in which radium chloride was given, grade 1 relief followed a single injection in two, and grade 1 relief persisted for eight days following the second and third injections in the other. In one case of destructive arthritis of unknown cause, relief came three days after injection and was almost complete and permanent. But in this instance other measures were used at the same time: the limb was put in extension, so that the relief from pain could not be attributed to radium alone. One case each of spondylitis deformans and acute rheumatic fever were treated without relief.

These studies indicate that the results of radium chloride in the treatment of arthritis, arthralgia and neuralgia were not very encouraging, and usually the relief was open to question. It is also interesting to note that when the first dose failed, repetition of the injection was not of much benefit. From our experience we doubt the desirability of repeating injections when the first has failed.

The results thus summarized are shown in table 2. The cases do not represent a wide variety of diseases, but they do represent types in which pain is troublesome, and often resistant to the usual methods of treatment. The response is not uniform, even in what seem to be the same type of cases, and we have not been able to determine any criteria whereby success or failure in the use of the drug might be predicted.

In our study of vascular diseases, typhoid vaccine was tried by G. E. Brown for two purposes: diagnostically, to see whether or not the temperature of the extremities increased with the advent of fever, and therapeutically for its own specific protein effect. It was quickly recognized that typhoid vaccine exercised a remarkable influence on pain in Buerger's disease and that this was more complete and lasting than that resulting from radium. Consequently, in our treatment of this type of pain, radium has been replaced by vaccines.

Although the results that we are reporting are extremely disappointing, we are carrying through a

small group with treatment over prolonged periods in order to make certain that we are not overlooking any possibility whatever from the standpoint of radium.

SUMMARY

The intravenous use of radium chloride in doses of from 10 to 50 micrograms has not been attended by toxic manifestations.

In twenty-two cases of carefully controlled hypertension, treatment by radium chloride intravenously did not yield sufficiently favorable results to encourage its further use. Following the injection, a transient fall of pressure was observed similar to that following the use of sodium nitrite or phenobarbital. In two cases there was a slight response, which persisted during the period of observation.

Radium chloride was used intravenously to relieve pain thirty-nine times in twenty-eight cases. The response of the pain of thrombo-angiitis obliterans, and to a less extent of diabetic neuritis, was gratifying. In a miscellaneous group, consisting of endarteritis obliterans, neuritis, arthritis, and pruritus vulvae, the relief was not sufficient to warrant further usage. The best results were obtained in the relief from pain in thrombo-angiitis obliterans, but even in this condition radium therapy has been replaced by treatment with nonspecific vaccines, which yield even greater relief.

TABLE 2.—*Effect of Radium Chloride on Pain*

Case	Diagnosis	Symptom Treated	Amount of Radium Chloride, Micrograms	Relief: Grade	Relief: Duration
1	Thrombo-anglitis obliterans	Rest pain	25	0	
			25	1	Two days
			25	1	Two days
			25	0	
2	Thrombo-anglitis obliterans	Rest pain	25	1	Indefinite
			25	1	
3	Thrombo-anglitis obliterans	Rest pain	25	3	Four to six days
4	Thrombo-anglitis obliterans	Rest pain	10	3	Indefinite
5	Thrombo-anglitis obliterans	Rest pain	25	4	At least seven days
6	Thrombo-anglitis obliterans	Rest pain	25	4	At least nine days
7	Thrombo-anglitis obliterans	Rest pain	25	1	Indefinite
8	Thrombo-anglitis obliterans	Rest pain	25	4	Six days
9	Thrombo-anglitis obliterans	Rest pain	25	4	Eight days
10	Thrombo-anglitis obliterans	Rest pain	25	1	Ten days
11	Thrombo-anglitis obliterans	Rest pain	25	1	Indefinite
12	Thrombo-anglitis obliterans	Rest pain	25	4	At least fourteen days
13	Endarteritis obliterans.....	Claudication	10	0	
14	Endarteritis obliterans.....	Rest pain	10	1	Six days
15	Diabetes mellitus and pruritus vulvae	Pruritus vulvae	25	1	Indefinite
16	Pruritus vulvae.....	Pruritus	25	1	Indefinite
17	Hypertrophic arthritis.....	Neuralgia	25	1	Indefinite
18	Diabetes mellitus.....	Neuritis	10	2	Six days
			25	2	Six days
19	Vascular diabetes.....	Neuritis	10	3	Four days
			25	4	Four days
20	Sciatic neuritis.....	Neuritis	25	1	Indefinite
21	Brachial neuritis.....	Pain	25	0	
22	Chronic infectious arthritis.	Joint pain	25	1	Indefinite
23	Chronic infectious arthritis.	Joint pain	25	0	
24	Destructive arthritis.....	Joint pain	10	2	Five days
			25	2	Eight days
			10	2	Indefinite
25	Destructive arthritis.....	Joint pain	25	3	Relief came in three days and was permanent
26	Chronic infectious arthritis.	Joint pain	25	1	Indefinite
			25	2	Eight days
			10	2	Indefinite
27	Spondylitis deformans.....	Neuralgia	50	0	
28	Acute rheumatic fever.....	Joint pain	25	0	

CONCLUSIONS

1. Radium chloride sometimes lowers blood pressure, occasionally quite markedly, but the same results can easily be obtained by other and simpler methods.

2. Radium chloride relieves pain, and the relief is occasionally marked; but the same results can usually be obtained by other and less expensive measures.

3. While qualitatively radium may relieve pain and reduce blood pressure, the results quantitatively usually fall far short of success.

4. The use of radium in these conditions is justifiable provided the commoner methods have failed, but even when so used the results in our experience have usually been disappointing in the end. Perhaps the future may reveal other uses for radium, and it is possible that it may eventually play a part in medical treatment; but our experience in its use in the diseases for which it has been particularly advocated leads us to the opinion that its field of usefulness is very small.

BARBITAL AS A PREVENTIVE OF COCAINE TOXICOSIS

PRELIMINARY REPORT

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For a number of years I have administered to all patients requiring operation under local anesthesia morphine either alone or in combination with atropine or scopolamine. In spite of this precaution, a considerable number of these patients have exhibited symptoms of poisoning, such as pale, cold, clammy skin, rapid and feeble heart action, and convulsive tremors.

During the last year I have substituted for these drugs diethyl barbituric acid (barbital) or its sodium salt (sodium barbital), with the result that none of the 100 patients so treated have manifested any of the symptoms mentioned above, and the natural inference is that barbital is an efficient antidote to cocaine, procaine hydrochloride and other similar drugs used to induce local anesthesia.

This inference is strengthened by the results of animal experimentation carried out by Tatum, Atkinson and Collins [1] in the laboratory of pharmacology of the University of Chicago, and the perusal of their observations suggested to me the clinical use of barbital as described in the foregoing. Their report demonstrated that the preliminary intravenous administration of sodium barbital and paraldehyde increased the tolerance of dogs to cocaine to the extent of about 400 per cent. Space will not permit a complete analysis of this report, and the reader is referred to the original article, which is a valuable contribution to pharmacology.

It has not been found necessary in average cases to use the intravenous method, and I administer from 6 to 12 grains (0.4 to 0.8 Gm.) of sodium barbital by mouth at least one-half hour before inducing anesthesia. This is best given in 3 grain (0.2 Gm.) capsules followed by a glass of water to hasten absorption; the dose is regulated by such factors as age and weight.

Clinically, barbital alone appears to be as efficacious as when combined with paraldehyde, although for intravenous use the latter drug would be of considerable value. The investigators referred to say: "From our own experience and the experience of others, atropine, chloral hydrate, ether and morphine, separately or variously combined, are not satisfactory antidotes for cocaine poisoning, either having no significant effect or even actually increasing the dangers."

1. Tatum, A. L.; Atkinson, A. J., and Collins, K. H.: Acute Cocaine Poisoning, J. A. M. A. 84:1177 (April) 1925.

I have had no cases of cocaine toxicosis since the routine preliminary administration of barbital has been adopted; therefore I cannot report on the value of the latter drug when symptoms have already become manifest. It is, however, probably as efficacious as any of the antidotes now in use and should be given a trial, the sodium salt preferably being given intravenously. It may be added that barbital induces a mental quietude equal to that induced by morphine, and has none of the disadvantages of the latter drug.

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CITRIC ACID METABOLISM AS INDICATED BY URINARY EXAMINATION *

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That citrus fruits are a base-forming article of diet has long been considered as established, and on this fact many dietary uses have been recommended. Sherman and Sinclair [1] were the first to attack this problem, and it was further worked on by Blatherwick and his co-workers.[2] However, Blatherwick indicated in one of his recent articles that there is a possibility that the ingestion of large amounts of acid causes an excretion of an increased amount of acid in the urine. In order to study the effect of ingestion of large amounts of organic fruit acid, citric acid was fed under varying conditions to hogs, as they seemed the best suited animal for the investigation. As it was difficult to obtain sufficient amounts of citric acid through fruits, citric acid was fed direct, mixed with the weighed ration, and the urine was collected from a metabolism cage, and analyzed. Quantitative determinations were run regularly for free acid, organic acid, phosphorus, ammonia, total nitrogen, acetone, citric acid and calcium, and from these the metabolism of the animal was judged.

In this experimentation the object was to determine, first, the reaction of the animal to the citric ion (combined with sodium [3]), and then to determine the reaction of the animal to free organic acid, trying if possible to reach a point at which the ingestion would produce an increased acidity of the urine as suggested by the work of Blatherwick and Long.[4] It was found that as long as the increase was gradual the animal was able to develop a tolerance (whatever this may be) which prevented the urinary acid excretion from increasing. When increased rapidly, a so-called flushing point was reached, in which the urine began to increase in acidity; but this occurred only after large amounts were given; i. e., 2 liters of normal citric acid or 140 Gm. of crystallized acid a day to a 30 Kg. hog.

When this point had been arrived at, the animal was returned to a normal diet for two weeks to determine whether this would change its degree of tolerance or oxidative power. It was found that this tolerance was lasting, and while the urinary acidity was increased when excessive amounts of acid were fed, the excretion of actual citric acid did not increase; in fact, it was comparatively very low.

In the latter part of the investigation, an attempt was made to determine the relation between citric acid ingestion and ketosis (acidosis). It was not altogether satisfactory, as at first we did not know to what degree a hog would produce a ketosis by starvation methods, and consequently it was impossible to judge whether or not citric acid was showing a direct antiketogenic action. Additional series were run in an endeavor to produce a sufficiently large ketosis in an animal (by the starvation method as suggested by Shaffer [5]) to gain accurate concise results. This was without success. Another attempt was made to produce a ketosis in a human being by a three day fast, citric acid and saccharin being fed on the last day, with indefinite results. Because of the severity of the test, it was not possible to do further work along this line.

By the use of mixtures of sodium citrate with citric acid, the antiacid effect of fruits containing mixtures of this kind is corroborated for all reasonable quantities of intake, even when the fruit carries an appreciable percentage of free acid. Most lemons contain about 10 cc. of normal citric acid, but this is quite well buffered, and when compared with the enormous quantities of citric acid which may be fed to an animal before causing an increase in the acidity of the urine, it may be assumed that any amount of fruit that is likely to be given a person can be trusted not to cause any appreciable increase in urinary acidity, under normal conditions. The more prevalent use of citrus fruits in general therapy is to be recommended, for aside from the antiacid effect and the pleasant dietary advantages, there seems to be a stimulating effect to the metabolic functions concerned with the disposition of carbon radicals in the body.

The top limit of the antiacid effect rises rapidly (in the pig) as the experimental animal becomes habituated to the specialized diet. This verified the usefulness of citrus fruit, especially the milder species, as a habitual constituent of dietaries in conditions that demand an antiacid metabolic condition (acidosis in conditions such as diabetes).

It is not fair to judge the wholesomeness of a citrus diet by the initial effects of a sudden change to an extreme citrus intake, because the oxidative habits of the organism at the time have not yet risen into harmony with the new intake. Even a moderate degree of habituation will lead to a very different and much more favorable picture. It may be inferred that such would also be true in the use of citrus fruits in dietetics.

The citric acid habit does not seem to affect acetonuria in any way; at least it is not marked enough to be determined when working with very small amounts of acetone bodies excreted, such as were obtained by experimenting with the hog. It may be anticipated, however, that when used as a therapeutic measure in combating postoperative acidosis (ketosis) it would have no drawback, and that aside from the sugar content of orange juice, it might have some direct or indirect antiketogenic action due to the citric acid content.[6] Further animal and human experimentation will be necessary to prove or disprove this point.

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The last half of this work was done under a grant from the California Fruit Growers Exchange, San Dimas, Calif.

* Data and more detailed information regarding the initial part of this investigation are being presented in a paper published in the American Journal of Physiology.

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Clinical Notes, Suggestions and New Instruments

IMPROVED URETHRAL SYRINGE

F. A. VAN BUREN, M.D., SAN ANTONIO, TEXAS

Some years ago I devised a long, slender barrel syringe (fig. 1) for treatment of the female urethra. This instrument became very popular and was useful to those doing gynecology and urology. It may be used also as a uterine syringe.

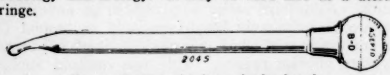


Fig. 1.—Syringe with long, slender barrel.

Recently I devised another model, for the female urethra and bladder only. It has a capacity of about 30 cc. of fluid, a longer curved conical tip reaching the bladder, and eccentrically placed so as not to interfere with a vaginal speculum if used. Slight pressure prevents the return of the liquid (fig. 2).

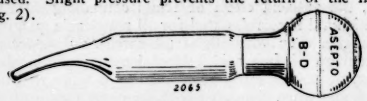


Fig. 2.—Syringe for female urethra and bladder.

These syringes are always in working order; they have the nonfilling bulb, and are easily cleaned and sterilized. They are manufactured through the courtesy of Becton Dickinson & Co., makers of the "Asepto" line.

401 Travis Building.

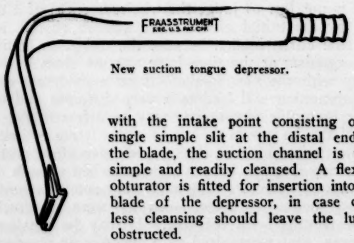
A SIMPLE SUCTION TONGUE DEPRESSOR

RUFUS JACKSON, M.D., BATON ROUGE, LA.

Another suction tongue depressor is offered for the approval of the profession in the belief that it obviates the two serious objections to other such instruments:

1. The thickness and width of the blade is not such as seriously to obstruct the work of the operator.

2. The instrument, being simply a hollow, seamless tube, flattened on the end and curved to form a depressor blade,



New suction tongue depressor.

with the intake point consisting of a single simple slit at the distal end of the blade, the suction channel is very simple and readily cleansed. A flexible obturator is fitted for insertion into the blade of the depressor, in case careless cleansing should leave the lumen obstructed.

An opening into the lumen of the handle just above the curve of the instrument, and convenient to the thumb of the hand holding the instrument, acts as what might be called a thumb valve. When left open, it permits the ingress of air at this point, thereby preventing continued suction from interfering with the ether vapor column, when such use is more desirable than the continued operation of the instrument as a suction apparatus.

The lower lip of the intake suction slit projects one-sixteenth inch beyond the upper lip. This is very essential to avoid the blocking of the intake slit by enveloping of the tongue or by slight contact with the pharyngeal wall.

Special Article

THE POTENTIAL DIABETIC CHILD*

PRISCILLA WHITE, M.D.
BOSTON

Overheight in the diabetic child is more common than overweight in the diabetic adult in the past history of the patient. Previous to insulin therapy, surviving diabetic children soon fell far below height as well as weight, and the fact that the diabetic child was originally tall for his age escaped notice. The proof of overheight is furnished by the records of the heights at the onset of diabetes, as well as the maximum weights preceding the onset, in 100 diabetic children for whom these data were sufficiently explicit in the series of Dr. E. P. Joslin.

Ninety per cent of our 100 diabetic children were overheight, in contrast to 80 per cent of 925 adults [1] who were overweight prior to the disease. It is generally admitted that overweight is a precursor of diabetes in an adult, and now we have evidence even more striking of overheight in the child. This deviation of height from the normal average, when based on Wood's table,[2] amounts to an excess of $2\frac{7}{10}$ inches.

If the Holt [3] standard is used, 87 per cent are above standard, and the average height of the entire group exceeds the standard by $2\frac{2}{10}$ inches.

Our children are predominantly of the public school class; indeed, only three children of the series have attended private schools in a vicinity where private schools are numerous. Therefore, it would not be fair to compare their heights with the standard based on children from private schools. Should this be done, however, it would be found that they exceed Baldwin's [4] selected group from the Francis W. Parker School (well-to-do class) by eight-tenths inch. They are in turn exceeded by the Benedict and Talbot [5] private school children by 0.3 inch and by the Horace Gray's [6] recent standard, which is the highest published standard for American school boys, by seven-tenths inch.

The symptomatology of diabetes in the adult and the child is the same. There must be some significance in the fact that so striking a precursor of the disease as overweight should be rare in the child yet common in the adult. Our records show that obesity is rare before diabetes breaks out in children. There were only five who were as much as 10 per cent overweight for height, and only two reached the obese class of 20 per cent overweight. Compared with Gray's standard, they weigh for their height nine-tenths pound less than the slender private school child.

Growth, like obesity, is influenced by many factors, some of which are little understood. To explain overgrowth as a precursor of diabetes is difficult, and interpretation of data such as the foregoing is necessarily speculative. If this growth is normal growth, one

* From the New England Deaconess Hospital.

1. Joslin, E. P.: The Prevention of Diabetes, J. A. M. A. **76**:79 (Jan. 8) 1921.
2. Wood: The Ninth Year-Book of the National Society for the Study of Education, part 1, Health and Education, Chicago, 1910, p. 34.
3. Holt, L. E.: Diseases of Infancy and Childhood, ed. 7, New York, D. Appleton & Co., 1911, p. 20.
4. Baldwin, B. T.: Physical Growth of Children, University of Iowa **1**:261-291, 1922.
5. Benedict and Talbot: Pub. 302, Carnegie Inst. Washington, 1921, p. 32.
6. Gray, Horace; and Fraley, Frederick: Growth Standards: Height, Chest-Girth and Weight for Private School Boys, Am. J. Dis. Child. **32**:554 (Oct.) 1926.

should consider such factors as heredity, race and caloric intake. The importance of height heritage cannot be determined in this series, as some of these patients first came under observation twenty-five years ago. So far as race is concerned, we know that all the children were American born. As a group, they represent an average racial mixture. Fifty-six per cent were of American parentage; 17 per cent were Irish; 11 per cent, Swedish; 7 per cent, Hebrew; 5 per cent, French; 2 per cent, German, and there was a Scotch and Italian parentage in 1 per cent each.

The superior growth of the private school child, according to Benedict and Talbot, is due to the advantages offered by their favorable environment, nutrition and medical care. These factors eliminate such obvious physical defects as diseased teeth and tonsils. With the possible exception of nutrition, our patients have not had an especially favorable environment, as evidenced by the fact that on first examination 4 per cent had abscessed teeth, 44 per cent had evidence of tonsil infections within eighteen months of the onset, and 64 per cent had general adenopathy.

Functional strain of the pancreas in this type of child is not inconceivable. With the attainment of optimum growth the growth impulse is temporarily satisfied, but if the caloric intake remains high, an overstrain of the organs of metabolism including the pancreas may result, and diabetes ensues. Functional strain alone does not offer an adequate explanation, for diabetes is rare among private school children whom our children so closely resemble in height-weight ratio. It is possible, however, that in our cases unremoved foci of infection may be the additional and precipitating factor.

Total Infections of One Hundred Diabetic Children Prior to Onset of Diabetes

	Infections in Life History, Per Cent	Infections in the Year Preceding Onset, Per Cent
Tonsillitis	70	15
Measles	65	10
Whooping cough	48	15
Mumps	30	10
Pneumonia	16	0
Scarlet fever	7	7
Chickenpox	7	0
Jaundice	5	0
Appendicitis	1	0

Extraordinary growth is known to occur following acute infections. In this series, in the year preceding onset, 40 per cent had a history of one or more acute infections. Furthermore, an accelerated rate of growth far above the normal occurs with the rest in bed which is associated with such chronic diseases as tuberculosis of the bones. However, in our series there were only two instances of a prolonged illness and arrest of activity preceding the onset of diabetes.

The results of an infection may be latent, and the harmful end-results might not appear until the lapse of a period of years. For this reason in the accompanying table are represented all infections that occurred prior to onset. Two per cent did not have infections. Sixty per cent were without infections in the year preceding the onset, and in the remainder the association appears incidental rather than causal.

It is well known that growth may be accelerated or retarded by disorders of the endocrine glands. The intimate relation of diabetes to disorders of the glands of internal secretion other than the pancreas is impressive and should be recognized. At the New England Deaconess Hospital, the frequency of the case of thyroid diabetes among the adult diabetic patients is too great to be considered merely an incidental occurrence. Six per cent of the children of this series had thyroid enlargement, none, however, with symptoms of disturbed thyroid function.

The influence of the internal secretion of the glands of sex on skeletal growth and body weight is best shown at two periods of life. During the growth period, early maturity means that growth in height is near its end. Tall girls mature earlier than short ones. Delayed maturity is associated with growth far above the average. In the adult, cessation of menstruation is often followed by obesity. A striking parallel exists between the completion of sexual development or the cessation of the functional activity of these glands and the onset of diabetes. Thus, with diabetes in adults, more than half of the cases have their onset in the fifth and sixth decades. In children, one half of the cases occurred between the ages of 10 and 15 when normal physiologic maturity should occur. Among twenty-four girls between the ages of 12 and 15 for whom information is available, when first seen, menstruation had become established in 84 per cent.

The average age for onset of diabetes was $13\frac{9}{10}$ years. The average age for the establishment of menstruation was $13\frac{7}{10}$ years.

The diabetic child closely resembles in some respects the thymic child, who is likewise superior in height, mentally precocious, and has a profuse growth of lanugo hair. Postmortem examinations of diabetic children are few, so we have little anatomic evidence of any subinvolution of the thymus in diabetes. Dr. Ralph Major, however, in a personal communication describes a case of fatal diabetic coma in a child in which the autopsy revealed an unrecognized status lymphaticus.

The possible relationship of the pituitary gland to diabetes has become more convincing through the work of Dr. Harvey Cushing. He has demonstrated the frequent association of hyperactivity of the pituitary gland and depressed function of the internal secretion of the pancreas by the frequency of hyperglycemia and glycosuria in 100 of his acromegalic patients. The excessive growth of our prediabetic children may well be a phase of pituitary activity. Whatever the explanation may prove to be, it is significant that preceding the onset of diabetes in the child it is the rule to find for the age an excess of height.

Addressing Lay Audiences.—We believe in public medical meetings, but whenever we arrange for such a meeting it should be understood that the speaker is to talk to laymen in a layman's language, so that a layman can understand. It may seem inexplainable, but it is a matter of fact that some of the brainiest and most conspicuous men in the medical profession know nothing about speaking to lay audiences. They never can get down to earth but always soar up in the heavens of scientific investigation and knowledge, and the talk usually goes right over the heads of the average lay audience. We call attention to this necessity of making the selection of speakers with a great deal of caution in view of the prevailing tendencies on the part of luncheon clubs to invite medical men to address them. Here in Indiana all appointments should be filled by our bureau of publicity, and that bureau will be particular in assigning some one who can talk intelligently and entertainingly in a layman's language though discussing highly scientific subjects.—*J. Indiana M. A.*, December, 1926.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 15, 1927

DON'T SLIP THE SLIP

The colored slip is in again; it has been inserted in this issue of THE JOURNAL. The same kind of slip, a reminder that subscription and Fellowship dues for 1927 were payable, was in the December 11 issue, and a large proportion of Fellows and subscribers promptly responded. For those who have not yet found it convenient to pay for 1927, the second slip is provided this week. If you have already paid, simply disregard the reminder. If you have not paid, now is the time. Then you will not receive a personal bill. The slip may also be used in remitting for subscriptions to any of the special journals published by the Association or to *Hygeia*. Indeed, it should be!

THE EHRLICH SIDE CHAIN THEORY

Vaughan, in his delightful "Memories,"[1] quotes Metchnikoff, the father of the phagocytic doctrine, as saying twenty years ago, "If a German does not believe in Ehrlich's side chain theory, he is damned." The statement well expresses the strong hold that Ehrlich's view had on the German scientific mind of that day. True, Bordet and his pupils refused to be counted among the "believers," but, with the exception of this group, the theory has had practically universal acceptance. To this day few textbooks in bacteriology fail to present colorful pictures of the toxin molecule uniting with the cell receptor antibody, fitting into each other as a "key fits into a lock."

Ehrlich, in formulating his theory, went for analogy to the realm of nutrition. He conceived the body cell as a complex mass of protoplasm, consisting of a central and relatively stable nucleus, surrounded by innumerable atomic groups or side chains, capable of uniting with nutritive material and ultimately, by assimilation, making it part of the protoplasm of the cell. If, instead of nutritive material, some toxin circulated in the blood, those side chains which had a specific chemical affinity for the toxin would soon combine with it and lead to the injury of the cell. Meanwhile, the cell would attempt to replace the side chains that combined with the toxin. Since there is a tendency toward overproduction of cellular elements in tissue regeneration (Weigert), the cell would produce far more side chains than the number originally destroyed by the toxin; so many, indeed, that the cell could not hold them, with the result that they would be thrown into the circulation. These circulating side chains, in the form of antitoxin, would combine with the toxin, thus keeping the latter from combining with and injuring any body cells. In spite of the fact that the side chain theory was the offspring of Ehrlich's conception of cell nutrition, the theory has held sway in the field of immunology and not at all in the field of nutrition. The modern student of nutrition considers amino-acids and not colloidal protein molecules as the units which are taken up by the cell and synthesized into its structure.

Perhaps the main difficulty with the side chain theory is that the union of the cell receptors or antibodies with toxin can be so illustrated as to give workers the impression that immunologic reactions or equations have their analogy in chemical equations, forgetting that the latter are based on indisputable fact and the former largely on fancy. That specific antitoxin is capable of neutralizing toxin is known, but the modus operandi is unknown. Probably such immunologic equations, if continued without experimental proof, may retard rather than hasten the development of our understanding of immunologic phenomena.

Studies recently carried out by Manwaring[2] and his associates lead them to conclude that the side chain theory does not conform with observed fact. These workers perfused isolated blood-free organs of normal and immunized dogs with solutions containing specific antigens. In accordance with this theory, one might have expected that the organs of the immunized animals would contain large numbers of loosely bound receptors or antibodies that would readily combine with the perfused antigen. Actually, the immunized organs did not show greater affinity for the circulating antigen than the normal organ. Then, again, if three fourths of the blood of an anaphylactic dog was withdrawn and replaced by transfusion from an immune dog, the added circulating antibodies did not furnish any demonstrable protection whatever to the transfused animal as determined by an immediate anaphylactic test, which again is not in accordance with this theory. Furthermore, one must assume from this theory that the same antigen will produce qualitatively identical antibodies in all methods and all stages of sensitization and immunization. These workers found, however, that in dogs the sensitizing antibody and immune

1. Vaughan, V. C.: A Doctor's Memories, Indianapolis, Bobbs-Merrill Company, 1926, p. 139.

2. Manwaring, W. H.: The Basic Concepts of Immunity, J. Immunol. 12: 177 (Sept.) 1926.

antibody have physiologic properties that are entirely different.[3]

Manwaring believes that immunology would fare better if the Ehrlich side chain theory were discarded and an entirely new attempt made to unravel the mystery of the origin and nature of antibodies, directing attention to normal and pathologic cell permeability for antigens and their interplay within the cell with hydrolyzing and synthesizing enzymes. This worker suggests a theory of immunity based on the assumption that antibodies are synthesized in the body by the action of enzymes. He admits that this, perhaps, would not be less visionary than the side chain hypothesis, but it would be in closer accord with the present conception of the biology of the cell. The very nomenclature of the Ehrlich theory is foreign to the biologist and makes him refer to the immunologist as belonging to an "esoteric cult."

THE ACTION OF INSULIN ON CARBOHYDRATES

The most striking feature of the action of the pancreatic hormone insulin is the immediate lowering of the content of blood sugar that it brings about in both the normal and the diabetic organism. As might be expected, one of the earliest efforts of those engaged in the interpretation of this characteristic action of insulin was directed toward the discovery of the fate of the disappearing carbohydrate. The suspicion that it might be destroyed by some form of glycolysis in the blood itself was soon given up. The possibility that glucose might become altered chemically in some way, so that either it would be more easily metabolized in the organism or would be converted into a different storage compound, was not so easily disposed of. Glycogen formation was always to be thought of; yet the glycogen stores were not regularly found to be augmented. Macleod[4] early came to the conclusion that insulin, after entering the blood, must pass into the tissues and set up in them some process that leads to a reduction in the amount of free glucose, thereby creating, as it were, a vacuum for this sugar, with the result that glucose is removed from the blood. In 1924, Macleod was forced to the tentative further conclusion that insulin causes the sugar of the blood (and tissues) to diminish in both the normal and the diabetic animal, partly because of an increase in the relative amount of carbohydrate that is metabolized and partly because some of the glucose is converted into nonsaccharin material, mainly glycogen in diabetes but some other substance in the normal animal. In the latter case, insulin actually causes the glycogen stores to become depleted because of the demand for glucose which it sets up, partly to form this unknown substance and partly to be oxidized.

The simplest group of probabilities with reference to the fate of sugar would include oxidation of the carbohydrate, formation of glycogen, or fat formation from it. These are amenable to experimental investigation, as has most recently been demonstrated by Cori[5] of Buffalo. He has measured the quantity of glycogen formed as well as the amount of carbohydrate burned up by experimental animals after being given the same allowance of sugar under both normal conditions and insulin dosage. The two groups absorbed the same amount of the latter. Glucose oxidation and glycogen formation accounted for 90 per cent of the sugar absorbed during four hours in both normal and insulinized animals. There were indications that the insulinized rats oxidized more glucose and deposited less glycogen than the normal rats. The difference in the liver glycogen of the normal and insulinized rats accounted for the difference in the total glycogen. Therefore, the insulinized animals deposited in the rest of the body tissues (chiefly in the muscles) the same amounts or even more glycogen than the normal animals.

It seems probable that the increased sugar oxidation in the insulinized animals occurs chiefly in the muscles. The ability to account for at least nine tenths of the absorbed carbohydrate without assuming the formation of any unique unidentified product leads to the conclusion that dosage with insulin tends primarily to increased sugar oxidation. The body either burns the carbohydrate or stores it in familiar ways.

RESPONSE OF THE COLON TO FEEDING

A well known group of symptoms—perhaps better called a syndrome—has been included by Alvarez[6] under the term "intestinal autointoxication": mental haziness, "dopiness," malaise, headache, coated tongue, poor appetite and so-called biliousness are involved. Constipation is a feature, and the syndrome is promptly relieved by evacuation of the bowel. The discomfort that may attend the retention of feces, expressing itself with widely varying degrees of intensity in different persons under varying circumstances, forms the subject of personal consideration by millions of persons. Many writers have regarded, as a cause of the discomfort, hypothetic poisons supposed to be engendered in the stagnant contents of the intestine. As relief comes promptly with bowel movement, Alvarez insists that the symptoms cannot be due to a poison circulating in the blood, because in that case relief would not follow immediately after removal of the source of the poison but later, when sufficient excretion had taken place to lower the concentration of the substance

3. Manwaring, W. H.; Wright, R. W., and Shumaker, P. W.: The Relation of Anaphylaxis to Immunity, J. A. M. A. **86**: 1271 (April 24) 1926.

4. Macleod, J. J. R.: Insulin, Physiol. Rev. **4**: 21 (Jan.) 1924.

5. Cori, C. F., and Cori, G. T.: The Fate of Sugar in the Animal Body: II. The Relation Between Sugar Oxidation and Glycogen Formation in Normal and Insulinized Rats During the Absorption of Glucose, J. Biol. Chem. **70**: 557 (Oct.) 1926. Cori, C. F.: The Fate of Sugar in the Animal Body: III. The Rate of Glycogen Formation in the Liver of Normal and Insulinized Rats During the Absorption of Glucose, Fructose and Galactose, ibid. **70**: 577 (Oct.) 1926.

6. Alvarez, W. C.: Intestinal Autointoxication, Physiol. Rev. **4**: 352 (July) 1924.

in the blood. To use a homely simile, he adds, one does not sober a drunken man immediately by taking his flask of whisky away from him. Some investigators have substituted a theory of the mechanical distention and irritation of the rectum by accumulated fecal masses in place of the "chemical autointoxication" hypothesis of constipation.

In any event, therapeutic judgment points to evacuation as the desideratum for the person concerned. It is readily understood, therefore, why so much consideration is given to the movement of the bowels and the conditions for securing effective defecation. By the printed page and by word of mouth, all manner of recommendations are broadcast on this subject. They range from the use of powerful purgatives to the simplest procedures of physical exercise. Few families fail to come under the spell of some favorite recommendation; hence one can well understand the longings of the author of Useful Cathartics [7] in prefacing his book as follows:

> When physicians no longer prescribe physic whether the patient needs it or not, when doctors cure and never cause the cathartic habit, when patients who require an evacuant are fitted carefully, skilfully and artistically with the very agent best suited for them, when medical students are taught therapeutics with sufficient thoroughness to enable them to prescribe the proper purge with intelligence and efficiency, when books on pharmacology and therapeutics adequately deal with the use of medicines—then, a publication like the present little book will no longer be required. May that day soon be here.

Perhaps it would not be amiss to call physiology also to the aid of the distressed. Somehow the act of defecation has been "regulated" by man to suit his convenience and opportunities. It is customary to speak of "regular" habits of the bowels, as though they should become an exception to functional adaptations in general, adjusting themselves to movements of the clock or the schedule of a business program. Is there not a physiologic moment as well as a convenient opportunity for defecation? The gastrointestinal canal will give a significant hint not only to the clever experimenter but even to the skilful observer. Long ago Hertz [8] noted by making hourly tracings from the fluoroscopic screen after a bismuth meal in man that, apart from meals, progress through the colon was slow, but after each meal there was perceptible progress, more occurring during the dinner hour than in the previous four hours. The demonstration that ingestion of food has a stimulating effect on the muscular activity of the colon has been made anew by Welch and Plant [9] at the State University of Iowa. In experimental animals the muscular activity of the colon consists chiefly of irregularly recurring changes in tonus, usually with superimposed contractions. The content of the colon is an important factor in determining the frequency and extent of these changes. When the bowel was normally full, feeding by mouth always increased its muscular activity. When the bowel was empty, feeding by mouth did not produce obvious change. In man, there was evidence of similar increase in activity in the sigmoid colon, indicating a "feeding reflex" dependent on appetite and the condition of the bowel as to content. A popular writer recently remarked that "there should be reasonable confidence extended to the bowels." Perhaps if persons were taught to heed carefully the physiologic postprandial urge of the large bowel, they might often find a confidence in its normal functional power to be thoroughly justified.

7. Fantus, Bernard: Useful Cathartics, Chicago, American Medical Association, 1920.
8. Hertz: J. Physiol. **47**: 54, 57, 1913.
9. Welch, P. B., and Plant, O. H.: A Graphic Study of the Muscular Activity of the Colon, with Special Reference to Its Response to Feeding, Am. J. M. Sc. **172**: 261 (Aug.) 1926.

Current Comment

STEINACH AND VORONOFF METHODS FOR REJUVENATION

Now that the display of newspaper publicity and sensationalism relative to the Steinach and Voronoff methods of rejuvenation is becoming subdued, the scientific periodicals are publishing reports of a few serious investigators who have attempted these operations and who are willing to make public their actual results. Lieut. J. P. Arland [1] of the Royal Air Force Combined Hospital in Busrah, India, begins his announcement with a succinct statement: "Vasoligation and testicular transplants in my hands have given discouraging results." He reports fifteen cases, in two of which the organs of monkeys were transplanted. In all of the transplant operations there were severe reactions. In only one of the fifteen cases was there anything even remotely resembling benefit to the patient, especially so far as concerns an increase in sexual power. The author concludes that vasoligation in man is of doubtful value for purposes of rejuvenation, and that testicular transplants from sheep or monkeys lead to acute inflammatory changes without producing any change to the good.

INDUSTRIAL ALCOHOL POISONING

The postholiday sensation of the current year was the occurrence of what the newspapers so aptly call "rum deaths." With terrific furor the information was made available that throughout the country persons were dying because they had been unable to restrain their holiday spirits. The imbibing of alcohol modified with wood alcohol, formaldehyde or any other of the substances which the government has characterized as suitable for making the alcohol industrially useful but digestively impossible was alleged to be the causative factor. In the midst of this misguided sensationalism, the health commissioner of New York announced that the majority of alcoholic cases in hospitals during the holidays were cases of excessive

1. Arland, J. P.: Vasoligation and Testicular Grafts in Men, Indian J. M. Research **14**: 317 (Oct.) 1926.

drinking rather than the results of poisoning by the queer concoctions dispensed by bootleggers to the sophisticated cosmopolites. At the same time the coroner's chemist of Cook County, Ill., announced 328 deaths from alcohol in 1926, as contrasted with 243 in 1925 and 251 in 1924. Here also the evidence was that death resulted from too much alcohol rather than from the character of the material imbibed. In a review of the situation, the *Oil, Paint and Drug Reporter* points out that the fault which has aroused objection to industrial alcohol is the fault of statutory law. The law is maintained to regulate the actions of human beings, but having failed in this instance, the lawmakers turn "to solemn pronouncements against inanimate articles—and folks smile patronizingly at the taboos of the Polynesians." It is impossible to make alcohol unsatisfactory for drinking purposes, except by adding to it ingredients that are necessarily poisonous. "Obnoxious agents are not sufficient," says the same periodical. "The human taste which can relish some of the products now concocted in kitchen breweries and cellar distilleries would not be deterred by any odor or taste which chemistry might devise." Denatured alcohol for industrial purposes is not a fault of the prohibition law; in fact, denatured industrial alcohol was in use long before prohibition, in order not to burden industry with the high beverage tax. If any one is opposed to prohibition, his argument should be against the law and not against one of the most useful industrial products available. The records do not reveal a single human death from denatured alcohol when used in automobile radiators.

PHYSICAL THERAPY AND PSEUDOPHYSICS

Much of the literature on physical therapy has apparently been written with an eye to the royalty statement or the publicity returns rather than to the possibility of scientific criticism. Aside from the questionable value attaching to the statements of clinical experience, these treatises become impressive, in size, at least, by the inclusion of statements on the physics of the apparatus culled almost in toto from the advertising and descriptive matter published by a manufacturer. This practice might be commendable if the physical concepts were not often wholly at variance with the concepts generally accepted by physicists. This wanton display of pathetic ignorance arises, no doubt, from a desire to make physical science conform to absurd, preconceived theories as to the biologic effect of physical energies. The physician who desires a substantial knowledge of physical therapy must choose his sources of information carefully. A recently published "Practice of Physiotherapy" teaches electrophysics to which physicists could not possibly subscribe. Some of the statements made indicate that the author has but an imperfect knowledge of Ohm's law, the fundamental and the most simple law of electricity. The belief that 20,000 volts will cause only one ampere to flow through the same resistance through which 2,000 volts forced a current of one ampere would be amusing if it did not give false conceptions of the physical laws on which the operation of physiotherapeutic apparatus is based.

Association News

THE WASHINGTON SESSION

Meeting Places of the Sections

A tentative selection of meeting places for the sections of the Scientific Assembly at Washington has been made as follows:

SECTION ON PRACTICE OF MEDICINE and SECTION ON DISEASES OF CHILDREN: Ballroom at the Mayflower Hotel.

SECTION ON SURGERY, GENERAL AND ABDOMINAL, and SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Continental Hall.

SECTION ON OPHTHALMOLOGY and SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Hall of Nations at Washington Hotel.

SECTION ON PHARMACOLOGY AND THERAPEUTICS and SECTION ON PATHOLOGY AND PHYSIOLOGY: Hall at Willard Hotel.

SECTION ON DERMATOLOGY AND SYPHILOLOGY and SECTION ON UROLOGY: Rose Room at Washington Hotel.

SECTION ON NERVOUS AND MENTAL DISEASES and SECTION ON ORTHOPEDIC SURGERY: Hall at Hotel Raleigh.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH and SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY: Concordia Church, Upper Hall.

SECTION ON RADIOLOGY: Concordia Church, Lower Hall.

It may become necessary to make some changes in this list, in which case prompt notice will be given through the columns of THE JOURNAL.

Railroad Rates to Washington

The passenger associations throughout the United States and Canada have authorized a rate of one and one-half fares for the benefit of members of the American Medical Association and dependent members of their families who will attend the annual session at Washington. To have the benefit of a return rate of one-half fare, it will be necessary for each member to secure a CERTIFICATE from the railroad ticket agent when he purchases his ticket to Washington. The CERTIFICATE must be certified to by the Secretary of the American Medical Association, which may be done at the Registration Bureau, to be located in the Auditorium in Washington, and must then be validated by a representative of the railroads, who will be on duty from 8:30 a. m. to 5:30 p. m., May 16 to 20. When the CERTIFICATE is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route traveled to Washington, at one-half fare. If the ticket agent at the member's home station does not have the CERTIFICATE, he will furnish information as to where it may be obtained.

The CERTIFICATE is *not* a receipt for money paid for a ticket, nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate. Be sure to ask the ticket agent for a CERTIFICATE.

The dates of sale of tickets to Washington will be May 12 to 18, inclusive, in the territories of the Trunk Line Association, the New England Passenger Association, the Central Passenger Association, the Southeastern Passenger Association and the Eastern Lines of the Canadian Passenger Association. In the territories of the Southwestern Passenger Association, of the Western Passenger Association, of the Transcontinental Passenger Association, and of the Western Lines of the Canadian Passenger Association, the dates of sale of tickets from Arkansas, Illinois and Louisiana and from St. Louis and Hannibal, Mo., and from Keokuk, Iowa, will be May 12 to 18; from Iowa, Kansas, Manitoba, Minnesota, Missouri, Nebraska, northern Michigan, North Dakota, Ontario, South Dakota, Saskatchewan and Wisconsin, and from Julesburg, Colo., May 11 to 17; from Alberta, Colorado, Montana, New Mexico, Oklahoma, Texas, Utah and Wyoming, May 10 to 16, and from Arizona, British Columbia, California, Idaho, Nevada, Oregon and Washington, May 6 to 12.

CERTIFICATES properly certified and validated will be honored for purchasing tickets for the return journey at one-half fare up to and including May 24, but will not be honored after that date. No refund of fare will be made on account of failure to present validated CERTIFICATE when purchasing return ticket. The return ticket must be used over the same route as that traveled going to Washington. Return tickets issued at the reduced rate will not be good on any limited train on which such reduced fare transportation is not honored.

When you purchase your ticket to Washington, secure from the railroad ticket agent a CERTIFICATE, which, when properly certified to and validated at the Registration Bureau in the Auditorium at Washington, will entitle you to purchase a return ticket to your home, over the same route traveled to Washington, at one-half the fare paid for your ticket to Washington.

To obtain certification and validation of these CERTIFICATES, you will not be required to go to the railroad station in Washington. The necessary certification by the Secretary of the American Medical Association and validation by the representative of the railroads may be secured in the Auditorium in Washington.

BE SURE TO ASK YOUR RAILROAD TICKET AGENT FOR A CERTIFICATE WHEN PURCHASING YOUR TICKET TO WASHINGTON.

Hotels at Washington

Name and Address	Single Without Bath	Single With Bath	Double Without Bath	Double With Bath	Suite
Annapolis 11th to 12th on H Street	.....	$3.00 -3.50	.....	$4.50 -5.00	.....
Arlington Vermont Ave. at K & 15th streets	.....	$5.00 -6.00	.....	$7.00 -8.00	$8.00-$10.00
Blackstone 1616 Seventeenth Street, N. W.	.....	.....	.....	$3.00 -4.00	..... each person
Burlington 1120 Vermont Avenue	$2.00	$3.50 -4.00	$3.00	$6.00 -8.00	$3.00 and up each person
Cairo 1615 Q Street	$2.00 -2.50	$2.50 -4.00	$3.00 -3.50	$4.00 -6.00	$6.00-$10.00
Capitol Park North Capitol and E streets	$2.50 -3.00	$3.00 -4.00	$4.00 -5.00	$5.00 -7.00	.....
Chastleton Sixteenth Street at R Street	.....	$3.00 -3.50	.....	$4.00 -5.00	$2.00 each person, 4 persons to suite of 2 rooms
Colonial Fifteenth and M streets		$2.00		$3.00-3.50	.....
Congress Hall New Jersey Ave. near Capitol	$2.50	$3.00 -3.50	$4.00	$5.00 -7.00	$7.00
Continental North Capitol, between D and E streets	$2.00 -2.50	$3.00 -4.50	$3.00 -4.00	$5.00 -7.00	.....
De Sales Chambers for Men 1735 De Sales Street	(Quotes a flat rate of $2.50 a man, double and triple.)				
Driscoll 1st and B streets	$1.50 -2.50	$3.50	$3.00 -4.50	$6.00	.....
Ebbitt H Street at Tenth	.....	$3.00	.....	$5.00 -6.00	.....
Everett 1730 H Street, N. W.		$2.00		$4.00	.....
Fairfax Massachusetts Avenue at 21st Street	.....	.....	.....	.....	$4.00-$5.00
Franklin Square 14th and K streets	$2.50	$3.50	$4.00	$5.00 -6.00	.....
Grace Dodge North Capitol and E streets (For women)	$2.50 -3.00	$3.00 -4.00	$4.00 -5.00	$5.50 -8.00	$12.00. Each extra person, $1.50
Grafton Connecticut Avenue and De Sales Street	$2.50 -4.00	$3.50 -5.00	$4.00 -6.00	$5.00 -8.00	.....
Hamilton 14th and K streets	.....	$4.00 -7.00	.....	$6.00 -10.00	$20.00
Herrington 11th and E streets	$3.00 and up	$3.50 -4.50	$4.00 -5.00	$5.00 -8.00	.....
Houston 910 E Street, N. W.	.....	$2.50 -3.00	.....	$2.50 each person	.....
LaFayette 16th and I streets	.....	$4.00 -5.00	.....	$6.00 -8.00	$10.00-12.00
Lee House 15th and L streets	.....	$3.50 -6.00	.....	$3.00 -10.00	$12.00
Logan Iowa Circle	$2.00	$3.00	$3.00	$4.00	.....
Martinique 1211 Sixteenth Street	.....	$4.00 -6.00	.....	$6.00 -9.00	$10.00-12.00
Mayflower Connecticut Avenue	.....	$5.00 -12.00	.....	$7.00 -15.00	$18.00-25.00
Meridian Mansions	.....	$3.00	.....	$4.00 -5.00	$7.00-9.00
Metropolitan 615 Pennsylvania Avenue	$2.00	$3.00	$4.00	$6.00 -7.00	.....
National 6th Street and Pennsylvania Avenue	$2.00 -2.50	$3.00 -3.50	$3.00 -3.50	$5.00 -6.00	.....
Occidental Pennsylvania Avenue	.....	.....	.....	.....	$3.00 for 4 persons
Parkside 1336 I Street	.....	.....	.....	.....	$3.00 for 1 person; $5.00-6.00 for 2 persons
Portland Vermont Avenue and 14th Street	.....	.....	$3.50	$4.50	.....
Potomac New Jersey Avenue and C Street, S. E.	$2.00	$3.00	$3.50 and up	$4.50 and up	.....
Powhatan 18th Street and Pennsylvania Avenue	.....	$4.00 -5.00	.....	$6.00 -9.00	$10.00-18.00
Raleigh 12th Street and Pennsylvania Avenue	$3.00 -4.00	$4.00 -6.00	$4.00 -6.00	$5.00 -10.00	$12.00-15.00
Roosevelt 16th and V streets	.....	$4.00 -6.00	.....	$5.00 -8.00	$7.00-10.00
St. James 6th Street and Pennsylvania Avenue	$1.50 -3.00	$3.50	$3.00 -4.50	$5.00 -5.50	$6.00-7.00
Stoneleigh Court Connecticut Avenue and L Street (American Plan)	$6.00 and up	$6.50 and up	$10.00 and up	$10.50 and up	$8.50 and up
Tilden Hall Connecticut Avenue at Tilden		$3.00		$4.00 -5.00	.....
Wardman Park Connecticut Avenue and Woodley Road	.....	$5.00	.....	$8.00	$15.00
Washington 15th Street and Pennsylvania Avenue	.....	$5.00 -8.00	.....	$8.00 -12.00	$20.00-30.00
Willard 14th Street and Pennsylvania Avenue	$3.00 and up	$5.00 -8.00	$5.00 and up	$7.00 -15.00	$18.00-22.00
Winston First Street and Pennsylvania Avenue	$2.00 -2.50	$2.50 -3.00	$3.50 -4.00	$4.50 -5.00	$2.50 and 3.00 each person

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Midwife Arrested.—Mrs. Marie Roderiguez, an unlicensed Mexican midwife, who has lived at Morro several years, pleaded guilty, Dec. 8, 1926, to violation of section 17 of the medical practice act, and was sentenced to serve sixty days in the county jail, the sentence being suspended for two years on condition that she does not violate this law during that period.

Health at San Diego.—Telegraphic returns to the U. S. Department of Commerce for the week ending January 1 from sixty-five cities with a total population of about 29 million indicate that the highest mortality was for San Diego (21.8), and that the mortality rate for the group of cities was 14.2. The mortality rate for San Diego for the corresponding week last year was 26.6, and for the group of cities, 14.5.

Surgical Meeting.—The Pacific Coast Surgical Association will hold its second annual meeting at Del Monte, February 25-26, under the presidency of Dr. Stanley Stillman, San Fran-

cisco clinics will be held in San Francisco for two days previous to the Del Monte meeting, and further information can be had from Dr. Edgar L. Gilcreest, San Francisco, the secretary. This association consists of surgeons of California, Oregon, Washington and British Columbia.

Personal.—Dr. William H. Geistweit, Jr., San Diego, has been appointed a member of the state board of medical examiners to succeed Dr. John C. Yates of San Diego. Other appointments to the board are Dr. J. L. Maupin, Fresno, to succeed Dr. Junius B. Harris of Sacramento, and Dr. A. K. Dunlap, Sacramento, to succeed Dr. Harry V. B. Brown of Glendale. Dr. Harris resigned from the board, and the other appointments were to fill vacancies caused by expired terms. ——Dr. D. C. Williams, LeGrand, inspector of the state institutions, has resigned.

Epidemic of Jaundice.—The department of public health of San Diego has issued a bulletin on an outbreak of 182 cases of jaundice which occurred in that city in October. The actual cause has not been determined, but it appears that the jaundice was of gastro-intestinal origin, and that there was a mild pollution of the city water about Sept. 29, 1926. It is assumed, until definite conclusions can be drawn, that the infecting organism was of the colon bacillus group. From 1920 to 1923 there were 300 outbreaks of jaundice in the United States, the report states, and 200 of them occurred in the state of New York in 1921 and 1922.

Society News.—Dr. William McKim Marriott, St. Louis, will begin a series of lectures before members of the San Diego County Medical Society, January 18, the first lecture will be open to all members; the remainder will be given in the auditorium of the new nurses' home at Mercy Hospital. ——The San Diego County Medical Society was invited to the naval hospital, January 8; Dr. Charles D. Lockwood, Pasadena, and Dr. Francis M. Pottenger, Monrovia, gave addresses on "Surgery of Pulmonary Tuberculosis," and "Medical Treatment of Pulmonary Tuberculosis," respectively. ——Dr. Edgar L. Gilcreest, San Francisco, addressed the San Diego County Medical Society at its annual dinner on "Personal Reminiscences of Sir William Osler."

ILLINOIS

County Buys City Hospital.—The city council of Rock Island has accepted the bid of the county supervisors for the sanatorium property at Twenty-Fifth Avenue and Seventeenth Street, consisting of five acres of land, building and equipment. At a special election in September, 1926, the citizens of Rock Island voted to sell the property.

Memorial to the Late Drs. Hodgen and Mudd.—The Pike County Medical Society, at a recent meeting in Barry, voted to erect a memorial tablet in the courthouse park at Pittsfield to commemorate the memory of the late Dr. John T. Hodgen and Dr. Henry Mudd, both of whom started their medical careers in that city. Dr. Hodgen, who later became a professor in the Missouri Medical College, St. Louis, was the inventor of the well known Hodgen's splint. Dr. Mudd also later became a well known surgeon, and was a teacher in the Missouri Medical College.

Liquor Licenses Revoked.—The district prohibition administrator, with headquarters at Chicago, recently issued orders revoking the liquor licenses of the following for the reasons indicated:

Dr. Herschel L. Bass, Grayville, issued prescriptions for beverage purposes and sold intoxicating liquor for beverage purposes; failed to keep records.
Dr. Milo A. Crane, Elmhurst, failed to keep proper records; submitted false and fraudulent reports of permit operations, making fraudulently executed prescriptions a part of same.
Dr. Samuel B. Herdman, Taylorville, failure to keep proper records; unlawful issuance of prescriptions.

Metropolis Woman's Club Awarded Prize.—Officials of the Illinois State Medical Society held a luncheon at the Morrison Hotel, Chicago, January 4, to award a prize of $500 to that woman's club of the state which, during 1926, did the most significant work in promoting the examination of preschool children. As president of the Woman's Club of Metropolis, Mrs. George H. Mosely was awarded the prize, which was the gift of a physician. Metropolis is on the Ohio River in the southeastern part of Illinois. Among the other children benefited by this campaign were many who spend much of their lives on house boats.

Chicago

Bureau Chief Appointed.—Dr. Alton S. Pope, assistant professor of epidemiology, DeLamar Institute of Public Health, Columbia University, New York, resigned to accept the position of chief of the bureau of communicable diseases of the Chicago Department of Health.

Personal.—John M. Coulter, Ph.D., professor emeritus of botany, University of Chicago, celebrated his seventy-fifth birthday, Nov. 20, 1926, at the Boyce Thompson Institute, Yonkers, N. Y., where he is now engaged in research.

Society News.—A dinner in honor of Drs. Leroy Sante, St. Louis, and James M. Martin, Dallas, Texas, was given at the Hamilton Club, January 12, by members of the Chicago Medical Society. Drs. Sante and Martin addressed the society at a joint meeting with the Chicago Roentgen Society.——The thirty-fifth annual meeting of the Chicago Ophthalmological Society will be January 17, at the Hotel Sherman; the guest of honor will be Dr. William H. Wilmer, Baltimore, who will speak on the William Holland Institute of Ophthalmology at Johns Hopkins.——Dr. James Burns Amberson, Jr., addressed the Chicago Tuberculosis Society, January 13, at the Brevoort Hotel, on "Correlation of Clinical Roentgenographic Data in Pulmonary Tuberculosis."

Liquor Licenses Revoked.—The local prohibition administrator recently issued orders revoking the liquor licenses of the following for the reasons indicated:

Dr. William J. Corcoran, unlawful issuance of prescriptions, failure to keep proper records.
Dr. Paul G. Dick, failed to keep proper records; issued prescriptions to fictitious names and addresses.
Dr. Clifton H. Frizelle, issued prescriptions to fictitious names and addresses; issued prescriptions bearing other irregularities; failed to keep proper records.
Dr. Margaret M. Jones, failed to keep proper records; issued prescriptions to fictitious names and addresses.
Dr. Tell Nelson, failure to keep proper records, issued prescriptions in an unlawful manner.
Dr. George E. Park, failed to keep proper records; issued prescriptions unlawfully.
Dr. George W. Tucker, failed to keep proper records, issued prescriptions unlawfully, same being issued to fictitious names and addresses.
Dr. Stanley R. Veselsky, issued prescriptions in an unlawful manner.
Dr. Orlando F. Scott, prescriptions issued to persons giving names and addresses found to be non-existent. Prescriptions issued to the same persons within prohibited time.

INDIANA

Hospital News.—The will of the late Mrs. Sarah Bixler, probated Dec. 29, 1926, leaves her entire estate, valued at more than $45,000, to the city of Warsaw for the erection of a hospital to be known as the William Bixler Hospital.

Dr. Long Honored.—The Kosciusko County Medical Society gave a banquet, Dec. 26, 1926, in honor of Dr. Charles R. Long of Pierceton, who, after forty-six years of continuous service in that community, is retiring from the practice of medicine. Resolutions were passed by the society and presented to Dr. Long, together with a gift in appreciation of his service to the community and the profession.

Foundation for Research in Children's Diseases.—The Riley Memorial Association announces the receipt of $53,000 from members of the association for the establishment of a memorial to Louis C. Huesmann, a member who had devoted years to the James Whitcomb Riley Hospital for children. This amount will be the beginning of a larger fund for the Louis C. Huesmann Foundation, the purpose of which will be to promote research in children's diseases at the Riley Hospital. For the present, the income will be used to establish a memorial fellowship.

Society News.—Dr. Joseph C. Beck, Chicago, held a clinic before the Tippecanoe County Medical Society at St. Elizabeth's Hospital, Lafayette, December 9, and addressed the society at a banquet on "Management of Complications of Ear, Nose and Throat Diseases Prevalent During the Winter." ——Army medical officers stationed at Fort Benjamin Harrison gave the program of the Indianapolis Medical Society, December 7; among others, Major Brown S. McClintic spoke on "A Medical Officer in Russia," and Major Lester C. Ogg, on "The Army Medical Corps."——Dr. Carl Krebs, Copenhagen, Denmark, was guest of honor at a banquet given by the St. Joseph County Medical Society, South Bend, December 8; Dr. Krebs gave an address on "Experiences in Mongolia and Russia." He is returning to Denmark to prepare to resume work in Mongolia.——Henry H. Goddard, Ph.D., professor of abnormal and clinical psychology, Ohio State University, Columbus, addressed the Indiana Society for Mental Hygiene at Indianapolis, December 13.——Dr. George P. Meyers, Detroit, addressed the Northeastern Indiana Academy of Medicine, Kendallville, Dec. 2, 1926, on "Treatment of the More Common Fractures."——Dr. Walter I. Lillie, Rochester, Minn., will address the Indianapolis Oph-

thalmological and Otolaryngological Society, February 10. ——Dr. Robert M. Moore, Indianapolis, gave a demonstration of a "Periodic Health Examination" before the Grant County Medical Society, recently.——Dr. Royal Whitman, New York, addressed the Indianapolis Medical Society, recently, on "Treatment of Fractures."——Dr. Homer G. Hamer has been elected president of the Indianapolis Medical Society, and Dr. Lyman R. Pearson, secretary, reelected. At the annual banquet preceding the election, the guests of honor were eighteen past presidents of the society.

LOUISIANA

Personal.—The governor has appointed Dr. Benjamin A. Littell, Opelousas, coroner of St. Landry Parish to succeed his brother, Dr. Robert M. Littell, who died recently.—— Dr. Jacob W. Newman, New Orleans, has been elected president of the newly created board of administrators of the Municipal Boys' Home.——Dr. John R. Turner has been elected city health officer of Haynesville.

Hospital News.—The board of administrators of Charity Hospital, New Orleans, formally accepted the John Dibert Tuberculosis Hospital at the December, 1926, meeting; the hospital is almost ready for occupancy.——The fifty bed Greenwell Springs Tuberculosis Hospital, New Orleans, which is under the supervision of the state tuberculosis commission, was opened Dec. 25, 1926.

Site for Veterans' Hospital.—The governor was instructed by the board of supervisors of the Louisiana State University, Dec. 21, 1926, it is reported, to transfer the title to 400 acres of land from the state to the federal government in Rapides Parish, as a site for the erection of a permanent general hospital for the veterans' bureau. The mineral gas and oil rights on the land are to be reserved to the state of Louisiana. The next step in the transaction will be the approval of the site by the veterans' bureau, and the approval of the purchase of the tract by Congress.

Reorganization of Parish Boards of Health.—A law became effective in July, 1926, making it necessary for the police juries to reorganize the parish boards of health not later than their third regular meeting after July 28. The board of health is then required to meet the first Tuesday after election to perfect the organization and to elect a parish health officer, with the advice and consent of the state board of health, who shall be a licensed physician skilled in sanitary science. There is a provision whereby a parish health unit director may serve one or more parishes. The law requires the police jury to provide ample means for the maintenance and operation of the board of health; if the police jury fails to name the board of health at one of the three meetings, this then devolves on the state board of health. The state board, therefore, sent a letter, Dec. 31, 1926, to each police jury requesting the names of the persons they would like to have on the parish boards, in order that they may be named and confirmed at the meeting in January.

MARYLAND

Dr. Hogan Resigns.—Dr. John F. Hogan, for more than twelve years a member of the Baltimore City Health Department, has resigned as director of the bureau of communicable diseases to give his entire time to private practice.

Personal.—Dr. Ellett M. de Berry has been awarded a fellowship for training in extramural psychiatry by the National Committee for Mental Hygiene; Dr. de Berry is on the staff of the Sheppard and Enoch Pratt Hospital, Towson, Md.—— Dr. John F. Aubrey has been appointed a health officer for Baltimore City, and will be assigned to school work to succeed Dr. Emil H. Henning.

Society News.—Dr. George H. F. Nuttall, professor of biology, Cambridge University, England, lectured at the Johns Hopkins University School of Hygiene and Public Health, Dec. 20, 1926, on "Some Pioneers in Parasitology" and "Symbiosis in Plants and Animals," Dec. 21, 1926.——Drs. Joseph E. and Manuel G. Gichner gave an illustrated talk on "A Case of Tularemia" before the Baltimore City Medical Society, Dec. 17, 1926; Dr. Edward Francis, U. S. Public Health Service, opened the discussion. Dr. William Neill, Jr., spoke on "Radium in the Treatment of Menopausal Hemorrhage Without Demonstrable Lesion."——At a meeting of the Baltimore Medical Society, Dec. 3, 1926, Dr. Edward H. Richardson was elected president; Dr. George Carroll Lockard, vice president; Dr. Edward P. Smith, secretary, and Dr. Charles E. Brack, treasurer.——Dr. Edward H. Benson, Overlea, was elected president of the Baltimore County Medical Association at the annual meeting, December 8, at the Medical and Chirurgical Faculty Building, Baltimore; Dr. Walter M. Carmine, St. Helena, vice president, and Dr. Sydenham R. Clarke, Roland Park, secretary-treasurer. ——Dr. William S. Thayer, Baltimore, recently presented to the Academy of Medicine of Paris three autographed letters of Laënnec which he purchased several years ago.——Dr. John T. King, Jr., addressed the Baltimore Medical Society, January 7, on "Metabolic Studies on the Menopause," and Dr. Richard W. Telinde on "End-Results in Conservative and Radical Ovarian Surgery."

MICHIGAN

Office of Executive Secretary Discontinued.—At a meeting of the executive committee of the council of the Michigan State Medical Society, Grand Rapids, Dec. 9, 1926, it was decided to discontinue the office of executive secretary at the end of the year, when the contract with the executive secretary expired. The committee, recognizing the excellent work which had been done in the last two years by Mr. Smith, voted an honorarium of $500, as an expression of their appreciation of his services. The committee considered that the postgraduate conferences and other work might be directed satisfactorily from the main office. The editor of the state journal explains that a new plan of administrative policy that will conserve and enhance organization activity will be instituted. The next meeting of the council will be at Ann Arbor, January 24-25.

Dr. Kiefer Appointed State Health Commissioner.—Governor Green announced, Dec. 30, 1926, the appointment of Dr. Guy L. Kiefer, from 1901 to 1913 health officer of Detroit, to be state health commissioner, succeeding Dr. Richard M. Olin. Dr. Kiefer is a past president of the Michigan State Medical Society, was formerly chairman of the Section on Preventive Medicine and Public Health of the American Medical Association, and is head of the department of preventive medicine and public health, Detroit College of Medicine, and chief of staff at the Herman Kiefer Hospital, Detroit. He is an ex-president of the Wayne County Medical Society and of the Michigan State Health Officers Association. Dr. Olin has been in the state service for nine years, having been appointed health commissioner by Governor Sleeper and reappointed three times by Governor Groesbeck.

Society News.—Dr. Frederic Brush, medical director, Burke Foundation, White Plains, N. Y., addressed the January 4 meeting of the Wayne County Medical Society, on "Interrelation of Convalescent and Chronic Care."——Dr. Guy L. Kiefer addressed the St. Clair County Medical Society, Port Huron, Dec. 9, 1926, on diphtheria and scarlet fever.—— Dr. Vanny H. Dumond was host to the Bay County Medical Society, Dec. 8, 1926, at a turkey dinner.——The average attendance at the meetings of the Ingham County Medical Society during 1925 was 57 per cent of the total membership. ——At the second meeting of the Detroit Society of Neurology and Psychiatry, Henry Ford Hospital, Dec. 16, 1926, among other papers read were "Psychopathic Personality with Masochistic Reactions" by Dr. Groves B. Smith, and "Neuropsychiatric Diagnosis in the General Hospital" by Dr. Thomas J. Heldt.——Dr. Frank B. Tibbals addressed the Wayne County Medical Society, Detroit, Dec. 21, 1926, on "The Prevention of Malpractice Suits"; Mr. Herbert V. Barbour spoke on "The Defense of Malpractice Suits."

MINNESOTA

Liquor License Revoked.—The district prohibition administrator with headquarters in St. Paul recently issued orders revoking the liquor license of the following for the reason indicated:

Dr. Carl E. Johnson, Minneapolis, for the illegal disposition of his prescription blanks.

Society News.—Dr. Oscar Gans, professor of dermatology, University of Heidelberg, lectured at the Mayo Foundation, recently, on "Photosensitization Diseases of the Skin of Endogenous Origin"; Professor Gans was guest of honor at a banquet given by the Minnesota Dermatological Society, Minneapolis, Dec. 8, 1926, following which he held a clinic.

Personal.—Dr. George O. Welch has resigned as superintendent of the state insane hospital at Fergus Falls after thirty-four years of service.——Dr. George G. Eitel has given to the University of Minnesota Medical School $80,000, to establish a loan fund for the benefit of medical students.—— Dr. Melvin S. Henderson, Rochester, recently made a survey of the cripples in the districts surrounding Boise, Ida., under

the auspices of the Rotary Club, and addressed the Boise Medical Society on "Fractures."——Dr. William B. Linton has been elected president of the Olmstead County Medical Society.——Dr. Harry B. Fralic has been appointed head of the new Veterans' Bureau hospital at Fort Snelling.

NEW YORK

Hospital News.—Drs. Howard W. Davis, Clarence Whittemore, Rollin O. Crosier and Walter J. Farrell hereafter will manage the Johnson City General Hospital, Johnson City.——The Genessee Hospital, Rochester, recently opened a new five story pavilion.——Mercy Hospital, Watertown, a new three story building, was recently opened.——The city health commissioner of Yonkers has requested permission of the council to use part of an appropriation to establish the Chapin cubicle system in the Municipal Hospital for Communicable Diseases.

Changes in Personnel at State Hospitals.—The following appointments and resignations at the state hospitals were reported in the November *State Hospital Quarterly:*

Dr. Clarence H. Bellinger, appointed director of clinical psychiatry, Utica State Hospital.
Dr. George C. Bower, promoted to pathologist, Willard State Hospital.
Dr. Hortense V. Bruce, appointed assistant physician, Utica State Hospital.
Dr. Michael Bruck, appointed assistant physician, Manhattan State Hospital.
Dr. Mary Allen Dillon, assistant physician, St. Lawrence State Hospital, resigned.
Dr. Herman Dworzan, assistant physician, Manhattan State Hospital, resigned.
Dr. William Cecil Johnston, appointed assistant physician, Rochester State Hospital.
Dr. Tibor Norbert Kende, assistant physician, Manhattan State Hospital, resigned.
Dr. Charles H. Kimberly, assistant physician, Manhattan State Hospital, resigned.
Dr. John Levy, appointed assistant physician, Manhattan State Hospital.
Dr. Frederick Mayer, appointed assistant physician, Manhattan State Hospital.
Dr. Morris Nath, reappointed assistant physician, Middletown State Homeopathic Hospital.
Dr. Helena B. Pierson, assistant physician, Central Islip State Hospital, resigned.
Dr. Mortimer W. Raynor, superintendent, Kings Park State Hospital, resigned.
Dr. Herman G. Selinsky, appointed assistant physician, Kings Park State Hospital.
Dr. Ben Z. Steine, assistant physician, Manhattan State Hospital, resigned.
Dr. Eugene Szold, assistant physician, Kings Park State Hospital, resigned.
Dr. Wilmer S. Wilson, assistant physician, Manhattan State Hospital, resigned.
Dr. Bernard Zuckerman, assistant physician, Hudson River State Hospital, resigned.

New York City

Hospital News.—The performance of "La Gioconda" at the Metropolitan Opera House, January 8, was for the benefit of the Italian Benevolent Institute and Hospital, Eighty-Third Street and East River.

Endowments for the Academy of Medicine.—The Altman Foundation has donated $10,000 for the general work of the New York Academy of Medicine; an anonymous donor has promised a gift of $10,000 a year for five years, and a third $10,000 has been promised provided $300,000 for library endowment is raised before July 1.

Personal.—Dr. Iago Galdston has returned to the New York Tuberculosis and Health Association after a leave of absence, and has resumed his activities as secretary of the Health Education Service.——Dr. Morris Gleich has been appointed pediatrician to the Harlem Hospital.——Arthur W. Thomas, Columbia University, has been elected chairman of the New York Section of the American Chemical Society.——Dr. John L. Kantor has been appointed attending gastro-enterologist and reappointed associate roentgenologist at Montefiore Hospital.——Dr. David L. Engelsher has been appointed chief of the asthma clinic at the University and Bellevue Hospital Medical College.

Dr. Storey Goes to Stanford University.—Dr. Thomas A. Storey, professor of hygiene at the College of the City of New York, who has been appointed professor of hygiene and physical education at Stanford University, California, assumed his new duties, it is reported, January 1. Dr. Storey graduated in medicine from Harvard University, and from 1902 to 1906 was assistant professor of hygiene at Stanford. He organized the department of hygiene at the College of the City of New York, and from 1918 to 1921 served as the first executive secretary of the U. S. Interdepartmental Social Hygiene Board in Washington. Recently the Physical Education Society of New York and vicinity awarded Dr. Storey the Luther Halsey Gulick Award for distinguished service in the cause of physical education.

Hospital-Hotel Completes Plans.—The group of about 150 physicians and business men in New York who for three years have been planning for a $4,000,000 hospital-hotel have completed their plans. The hospital-hotel will cover a block on East End Avenue between Eighty-Seventh and Eighty-Eighth streets, overlooking the East River, will have about 400 rooms, and will be designed to provide medical, surgical and research facilities, and accommodations for relatives and friends of the patients. There will be practically no free accommodations, but in many instances the expense to patients will be less than in hospitals which use their income to pay the expense of charity wards. The president is Guion H. Fountain, formerly with the National City Bank, and the executive officers of the medical board are Drs. Alexander Lambert, James A. Miller and Joseph S. Wheelwright. The management will be vested in a board of directors to be elected by a board of control. Other physicians on the organization committee are Drs. Albert R. Lamb, George D. Stewart and Shepard Krech.

OHIO

Darke County Selected for School for Health Officers.—It is reported that the school to be established in Ohio for the training of county health officers will be located in Darke County, which is one of the border counties of the state, touching the Indiana line. The health commissioner of Darke County will be an official of the school, and the officer in charge will be provided by the Rockefeller Foundation (THE JOURNAL, January 1, p. 38).

Professor Fredericq the Next Hanna Lecturer.—Dr. Henré Fredericq, director of the Institute of Physiology, University of Liége, Belgium, will deliver the eighteenth Hanna lecture at the Cleveland Medical Library Association, January 18, 8:15, on "Humoral Transmission of Nervous Action," illustrated with lantern slides." Dr. Fredericq, who is a physiologist, is in this country as a guest of the Commission for the Relief of Belgium Educational Foundation.

Dr. Biggar's Will.—In the will of the late Dr. Hamilton F. Biggar, Cleveland, is a gift of $100,000 to the Cleveland Foundation, three fourths of the income from which is to be used for advancing the science of medicine; $5,000 to the Cleveland Medical Library Association, and $5,000 to the Babies and Children's Hospital at Cleveland. The *Bulletin of the Academy of Medicine* notes gently the passing of one of the outstanding old-time physicians of the city, who enjoyed for years a large practice among prominent families.

Fellowships for Study of Gases of Value as Anesthetics.—Western Reserve University, Cleveland, announces an annual grant by J. G. Sholes, president of the Ohio Chemical and Manufacturing Company, of $2,000 to establish fellowships for the study of gases, with particular emphasis on gases of value as anesthetics. The work will be done by the Morley Chemistry Laboratory under the direction of Harold S. Booth, Ph.D. The university will immediately consider applications for fellowships so that research may start with the beginning of the second semester about the first of February. Students accepted at this time will continue as fellows for a year and a half, and they will also receive a graduate degree credit for their work.

Cleveland Academy News.—There was a record attendance of 450 at the annual meeting of the Academy of Medicine of Cleveland, Dec. 17, 1926, in its new quarters at 2009 Adelbert Road; Dr. Richard L. Sutton, Kansas City, gave an illustrated talk on tiger hunting in southern Asia. The election of directors of the academy for three years was announced and the retiring president, Dr. Charles W. Stone, summed up the year's work. The secretary-treasurer, Dr. Harry V. Paryzek, stated that the academy was in such excellent financial condition that it would be possible to reduce the dues of active members from $35 to $30 by offering a rebate to those who paid within the first ten days of January. During the last year, the membership of the academy was increased by 109, making the total now 1,071.——Dr. George Draper, New York, will address the Academy of Medicine of Cleveland, January 21, on "The Psychological Panel"; there will be a symposium on rickets by Drs. H. G. Gerstenberger, John D. Nourse and J. I. Hartman. During the year 1926, thirteen out-of-town speakers addressed the academy; the average attendance at the meetings during the year was 209. At a special meeting of the board of directors the first week in January, a committee on health education was appointed. This new activity of the academy will start with a survey of health education in Cuyahoga County.

PENNSYLVANIA

Research in Pure Chemistry.—A department of research in pure chemistry has been established in the Mellon Institute of Industrial Research University of Pittsburgh with Leonard H. Cretcher, Ph.D., in charge. The activities of this department will be an integral part of the institute and will be sustained by institutional subsidy. The Mellon Institute is primarily an industrial experiment station, but for five years has given an increased amount of attention to the encouragement and support of pure chemistry, and has been successful in arranging for funds for the prosecution of investigations not suggested by industry but aimed toward the study of more basic problems than those usually investigated for direct industrial purposes. This work will be given an opportunity to expand. William L. Nelson, Ph.D., has been named the first fellow in the new department.

Philadelphia

Personal.—Dr. Hubert Work, secretary of the interior, was inducted as president of the Associated University of Pennsylvania Clubs at a reception, January 9.——Dr. Chevalier Q. Jackson gave the first public demonstration of the bronchoscope before the Philadelphia Forum in the Academy of Music, January 7.

Society News.—Dr. Frederick M. Allen, director of the Physiatric Institute, Morristown, N. J., will address the Northern Medical Association, January 17, on "Some Newer Developments in Metabolic Treatment."——The officials of the medical department of the Pennsylvania Railroad have given several hundred books to the library of the Philadelphia County Medical Society.

County Society's Postgraduate Work Extended.—The Philadelphia County Medical Society is presenting a postgraduate course in gastro-enterology for its members at 4 o'clock Friday afternoons. These seminars are given at the society home, Twenty-first and Spruce streets, and the instructors comprise many of the prominent men of the city. This will be the only seminar program attempted before next October; indeed, the question of continuing such a program depends on the success of the present group. The county society has further extended its postgraduate seminars by securing a list of Philadelphia hospitals which are desirous of having the neighborhood physicians attend clinics and make ward rounds with the attending physician or surgeon. The program for this arrangement appeared in detail in the January 1 *Weekly Roster and Medical Digest.*

SOUTH CAROLINA

Society News.—The Third District Medical Association met at the South Carolina State Training School, Clinton, Dec. 2, 1926, as the guest of the superintendent, Dr. Benjamin O. Whitten; the Sims Memorial address was delivered by Dr. John B. Setzler, Newberry. About sixty physicians were present.——Among the speakers at the Pee Dee Medical Association meeting, Dec. 8, 1926, were Dr. Andrew J. Crowell, Charlotte, N. C., and Dr. George H. Bunch, Columbia, president of the state medical association. Dr. James A. Norton, Conway, was elected president for 1927. The Pee Dee Association is the second oldest in the state.——Dr. John Shelton Horsley, Richmond, Va., addressed the Marlboro County Medical Society, January 12, Bennettsville, on "Peptic Ulcer and Gastric Cancer"; Dr. Robert Wilson, Jr., Charleston, on "Prevention of Heart Disease"; Dr. Lester A. Wilson, Charleston, "The Good and Bad Features of Modern Obstetrics," and Dr. William D. James, Hamlet, N. C., "Selecting the Method of Treatment of Uterine Fibromas." The president and secretary, Dr. George H. Bunch, Columbia, and Dr. Edgar A. Hines, Seneca, also addressed the society.

UTAH

Personal.—Dr. Frederick Stauffer has resigned as president of the state board of health after many years' service in that capacity, and will be succeeded by Dr. Joseph R. Morrell, Cgden, who has been a member of the board for a number of years. Dr. Stauffer will continue to serve on the board.

Decrease in Death Rate.—The death rate in Utah for 1925, the department of commerce announces, was 8.90 per thousand of population, as compared with 10.42 in 1924. The decrease was accounted for partly by decreases in the death rates for pneumonia, mine accidents, tuberculosis and enteritis. There were increases in the rates from nephritis, meningitis and whooping cough.

WEST VIRGINIA

Another Impostor Is Fleecing Physicians.—A brown-eyed, ruddy-faced, mustached, 265-pound man called on a physician in Montgomery about two weeks ago, ostensibly to have a roentgen-ray picture taken. He said that he owned planing mills at Oak Hill and at Handley, and that his own physician would call to discuss the picture on Friday. The picture showed normal conditions, and he offered a $25 check on the Citizens' Bank of Anderson, Ind., in payment. He was given the difference in cash and went away rejoicing. The check came back marked "no funds." Correspondence with the bank showed that there was not any such person in that community, and that several bad checks written by the same man had been received from Charleston, W. Va. This man seems to be working among physicians. The state police of Charleston, W. Va., should be notified when this man is apprehended.

WISCONSIN

Personal.—Dr. Clesson C. Atherton, formerly on the staff of the Kankakee, Ill., State Hospital, has been appointed superintendent of the Wisconsin Memorial Hospital, Mendota, to succeed Dr. R. L. Kenney.——Dr. Raymond C. Meyer has been appointed medical director of the new Sheboygan County Tuberculosis Sanatorium, Sheboygan.

Memorial Building at Madison.—The University of Wisconsin is constructing a building at Madison for Service Memorial Institutes for Medicine and Hygiene, which will cost about $568,000, and incidental expenses and equipment about $250,000. The building will be a memorial to citizens of the state who served in the World War, and these funds come from a balance in the Service Recognition Fund. The necessary legislation passed almost unanimously at the last session of the legislature. The building will be across the street from the departments of physics, chemistry and sociology, and will be connected by corridors with the Wisconsin General Hospital. It will provide quarters for the state laboratory of hygiene, the laboratory of the state board of health, for physiology, physiologic chemistry, pathology, medical bacteriology and parasitology, pharmacology, radiology and rehabilitation, the medical library, lecture and recitation rooms and shops. There are two other hospitals on the medical school and hospital site, the students infirmary and the Bradley Memorial Hospital, and a nurses' home, and there is still space for the development of additional medical school and hospital facilities.

CANADA

Hospital News.—The Sacred Heart Hospital on Gouin Boulevard, Montreal, for the treatment of incurables and tuberculous patients, costing $3,000,000, was recently opened.——The late Col. George R. Hooper, Montreal, left a bequest of $200,000 to the Montreal General Hospital in his will. Colonel Hooper also left about $100,000 to McGill University.——The Provincial Government of Quebec has made a grant of $100,000 to the Women's General Hospital, Montreal.

Dr. Harris Honored.—Dr. Wilbur H. Harris, dean of the Grace Hospital, Toronto, was presented with a portrait of himself by the staff of the hospital at a recent dinner at the King Edward Hotel. The presentation by Dr. William A. Burr was accompanied by an illuminated address. Among the speakers were Dr. John H. McConnell, Dr. Henry C. Wales and Dr. Charles J. Currie. Dr. Harris has been connected with the Grace Hospital for twenty-seven years.

Graduate Work a Success.—To Be Continued.—The British Columbia correspondent of the *Canadian Medical Association Journal* speaks very favorably of the recent postgraduate tour through that province conducted under the auspices of the national and provincial medical associations. Lectures and clinics were given in nine towns in accordance with a prearranged program, and, at the request of local physicians in other towns along the route, five additional stops were made by the three speakers from Winnipeg who had been selected to make this tour: Drs. Brandur J. Brandson, Daniel S. MacKay, and Daniel Nicholson, all of the University of Manitoba. At Ocean Falls, the party assisted a local physician at his request in the diagnosis of a difficult case, and at Smithers the railway company held its train

overtime several minutes to allow the instructors to assist a local physician make a diagnosis. The appreciation in these and other cases was great, and the general impression left by this party was excellent in every way. British Columbia is a province of great distances, and physicians at some of the arranged meetings traveled 300 miles to and from small communities to be present. Altogether about 150 instructors have been engaged in this postgraduate work throughout Canada during this last year. The Sun Life Insurance Company, whose generosity made the instruction possible, has given another $30,000 in order that the work may be continued, and arrangements are being made for another tour in the early part of the present year.

GENERAL

Society News.—Dr. Harold S. Diehl, head of the students' health service at the University of Minnesota, was elected president of the American Students Health Association at the recent annual convention in New York, Dec. 30, 1926, and Dr. Dean F. Smiley, department of hygiene and preventive medicine at Cornell University, secretary-treasurer.——Charles W. Johnson, Seattle, has been elected president of the American Pharmaceutical Association, and Ambrose Hunsberger, Philadelphia, and Joseph Jacobs, Atlanta, Ga., vice presidents.——The American Association for the Study of Goiter will meet in Philadelphia, January 31-February 2; Dr. Emil Goetsch, Brooklyn, will preside.

Court Refuses to Reconsider Medicinal Liquor Case.—The reconsideration of the medicinal liquor case, settled by the U. S. Supreme Court in a five to four decision several weeks ago, was asked by attorneys for Dr. Samuel W. Lambert of New York, who unsuccessfully attacked the validity of regulations limiting the prescription of whisky by physicians. The petition of Dr. Lambert stated that the court was laboring under a misapprehension as to any congressional inquiry on necessary dosage in stated periods of time. The petition declared that the adequacy of a pint of liquor every ten days was never made the subject of any hearing, and that facts were not presented to support it. The court refused to reconsider the case.

International Congress of History of Medicine.—The sixth International Congress of the History of Medicine will be held at Leyden and Amsterdam, Holland, July 18-29, at the universities of these cities. Papers are invited from members on subjects connected with the history of medicine and allied sciences; they should not exceed ten pages, and the titles should be addressed to the general secretary, Dr. J. E. Kroon, Stationweg 25, Leyden, before April 1. The subscriptions for members of the International Society of the History of Medicine are 10 guilders; for members of the congress only, 12.50 guilders; and for associate members (relative of a member or students), 5 guilders. Remittances should be made by money order or "crossed check" to the treasurer, Dr. F. W. T. Hunger, van Eeghenstraat 52, Amsterdam.

News of Epidemics.—The schools at Corydon, Ind., recently closed on account of an outbreak of smallpox.——The Claypool School in Kosciusko County, Ind., was closed the latter part of December because of an outbreak of smallpox.——An outbreak of sixty-five cases of chickenpox in Lake Forest, Ill., was reported, January 7.——The Progressive School near Libertyville, Ill., was closed recently on account of an outbreak of measles.——Seven cases of smallpox were reported discovered in Brooklyn, January 4.——The Memorial School, Pelham, N. Y., was recently closed because of an epidemic of scarlet fever.——Sixteen cases of smallpox had been definitely diagnosed at Dothan, Ala., Dec. 28, 1926, and the local hospital was said to be crowded with others under observation.——All public gatherings at Lakefield, Ont., were suspended for two weeks about January 1 in order to prevent the spread of smallpox, of which there were said to be then four cases.

Resurvey of Pharmaceuticals.—The bureau of chemistry of the U. S. Department of Agriculture has begun a resurvey of all the more important pharmaceutic preparations, with a view of eliminating substandard drugs from the market. This survey will cover a wider range of products than was investigated in the first survey by the bureau and will include drugs in the form of compressed tablets, capsules, ampules and other forms, whereas the first survey included chiefly hypodermic tablets and potent galenicals. The cooperation of the pharmaceutic industry is invited in this survey, there not being any doubt, the bureau states, of the possibility of mutual helpfulness and of general benefit from the exchange of information and the results of research on such subjects. It is the intention, however, to bring legal action whenever variations from standards are wider than are warranted under adequate supervision. The first survey showed that while the large majority of the products investigated were reliable and true to label, a not negligible portion was found at variance from their professed standards, and in some instances in which the variation was excessive, prosecutions were instituted.

Record Half Year for Disasters.—The acting chairman of the American Red Cross, Mr. James L. Fieser, states that major disasters of so vast extent and frequency in the fall of the year have never before been reported in a single half year of Red Cross history covering the last thirty-three years. The disasters and the number of persons assisted by the Red Cross were as follows:

July 10, 1926, explosion of U. S. Naval Ammunition Depot at Lake Denmark, N. J.; dead, 16; injured, 86; persons assisted by the Red Cross, 925.
August 27, southern Louisiana, hurricane: killed, 25; number assisted, 2,225.
September 11, eastern Kansas, flood: assisted, 3,000.
September 18, Florida, hurricane: dead, 327; injured, 6,327; assisted, 100,000.
September 18, northwest Iowa, flood: assisted, 2,000.
September 28, Illinois River Valley, flood: assisted, 8,000.
October 11, Oklahoma (Waggoner County), flood: assisted, 800.
October 13, Oklahoma (Bartlesville), flood: assisted, 1,800.
November 25, southeastern states, tornado: assisted, 356.
December 9, Princeton, Ind., mine explosion: dead, 30; injured, 28; assisted, 250.

Opposition in Senate to Sheppard-Towner Law.—Through the combined efforts of Senators Bingham of Connecticut, Reed of Missouri, and Phipps of Colorado, there was presented to the Senate, a few days ago, vigorous opposition to the pending bill to extend for an additional two years the provisions of the Sheppard-Towner law.

January 5, Senator Phipps of Colorado, chairman of the Committee on Education and Labor, presented the protest of the American Medical Association against extension of the Sheppard-Towner Act on the ground that the law is a product of political expediency and is not in the interest of the public welfare; that it is an imported socialistic scheme unsuited to our form of government; that it unjustly and inequitably taxes the people of some of the states for the benefit of people of other states for purposes which are lawful charges only for the people of such other states; that the law does not become operative until the respective states pass enabling legislation.

Senator Bingham read to the Senate the views of President Coolidge in his budget message to Congress, wherein he said:

> I have referred in previous budget messages to the advisability of restricting and curtailing federal subsidies to the states. The Maternity Act offers concrete opportunity to begin this program. The states should now be in a position to walk alone along this highway of helpful endeavor, and I believe it is in the interest of the states and the federal government to give them the opportunity.

Senator Bingham charged the proponents of the Sheppard-Towner Law with inserting in the *Congressional Record* statements from President Coolidge which did not include the foregoing positive recommendation in opposition to the Sheppard-Towner program.

Senator Bingham also read to the Senate an editorial from the *New England Homestead* of Dec. 11, 1926, which declared:

> The purpose back of the present effort is to gain time so this form of federal aid may be fastened upon the people as a permanency. Instead of protection for mothers and infants . . . the scheme now blossoms out as a full-fledged public health measure. Not content with seeking to dominate our homes and schools, federal bureaucrats would oust the states from authority over the public health.

In urging that federal bureaus should not be engaged in work of this kind, Senator Reed of Missouri said:

> We have in the United States many wonderful universities at which it is presumed the last word of medical lore is taught to medical students. . . . Nurses are taught in schools and colleges and work immediately under the direction of physicians. This vast machinery exists; and I want to know what a board of five or six officials in Washington can do. I cannot speak now with reference to the present board, for I do not know its personnel; but at the time this bill was here for debate on a previous occasion that board consisted, to all intents and purposes, of one woman—an unmarried woman—aided by a number of other unmarried women, women who had never been mothers, of course, for they had never been married. They were not learned in medicine. They were not even trained nurses. I want to know what knowledge that kind of a board can contribute to the medical fraternity of the United States, which has open to it all of these avenues of learning to which I have adverted.

There was also read to the Senate an article entitled "Further Fallacies of the Sheppard-Towner Propaganda" prepared by Dr. William C. Woodward, executive secretary,

Bureau of Legal Medicine and Legislation of the American Medical Association.

Proponents of this legislation are endeavoring to show that the medical profession is not a unit in opposing it and have presented to the Senate a telegram from Dr. Charles H. Mayo of Rochester, Minn., stating that "the Sheppard-Towner Act should be continued because inestimable public good results directly from this expenditure and also indirectly by stimulating individual states to carry on this valuable educational work."

In accordance with the wish of Senator Copeland of New York, a letter was also presented from Dr. Haven Emerson, professor of public health administration, Columbia University, New York, in which he said in part:

No one who has the least acquaintance with the facts of maternal and early infant mortality in the United States doubts that the administration of federal and state services under the Sheppard-Towner Act has contributed materially to the saving of lives of the mothers and babies of this country.

To permit the work under this act to lapse for lack of continuing appropriations for at least another period of three years would be to confess that the Congress is incapable of intelligent expenditure of the tax money, and that its members consider lives are less valuable than dollars.

FOREIGN

Personal.—At the annual meeting of the Royal College of Physicians of Edinburgh, recently, Dr. George M. Robertson was reelected president for the ensuing year.——The Carnegie Hero Fund has awarded a gold medal to Dr. Honoré Vercauteren of Ghent, Belgium, roentgenologist, who has been partially incapacitated through his devotion to the treatment of victims of occupational accidents.——Sir Berkeley Moynihan, president, Royal College of Physicians, will deliver the Hastings lecture in the Great Hall of the British Medical Association, January 24, on "Cancer and How to Fight It."

New Health Committee of League of Nations.—The three years' mandate of the members of the health committee of the League of Nations expired at the end of December, 1926. The last regular session of the old committee was held at Geneva, Oct. 13-19, 1926. The constitution of the health organization of the league provides that nine of the twenty members be elected by the permanent committee of the Office international d'hygiène publique at Paris, which is the advisory council of the health organization. The chairman and the nine members were designated at the session of the committee of the office, in Paris, in October. Six other members of the committee are appointed by the council after consultation with the health committee, and in addition, four assessors may, on the nomination of the health committee, also be appointed members by the council. The new health committee will hold a short session in February.

England Offers Commissions by Nomination.—Because of a shortage of candidates for the Royal Army Medical Corps, the war office announces that a limited number of candidates for commission will be made by nomination instead of by competitive examination. Twenty-five nominations for commissions are allotted to the medical schools and a certain number remain at the disposal of the war office, and if these candidates have held a residency in a hospital for not less than one year, their commissions may be antedated not more than one year if the commission is granted within six months of relinquishing their residency. This time will count for commission service, for purposes of pay, promotion, retirement, retiring pay and retirement gratuities, and thus will give officers a better chance of reaching a high rank before they attain the retiring age. The candidates for commission must be under 28 years of age and present themselves at the war office for medical examination. Largely as a result of representations by the British Medical Association of the conditions of service in the Royal Army Medical Corps, the rates of pay were completely revised last year. This representative body of the association has expressed its complete satisfaction with the present regulations.

CORRECTION

Remedy Proposed for Child Marriages.—The child welfare division of the Public Charities Association of Pennsylvania will sponsor two bills at the coming session of the state legislature. The child marriage bill establishes the minimum marriage age at 16 years for both sexes. The Hasty marriage bill provides for five days' advance notice of intention to apply for a marriage license. The Pennsylvania Conference on Social Welfare does not sponsor legislation as was stated in THE JOURNAL, Dec. 18, 1926, p. 2101; however, it initiated a study of the marriage laws in Pennsylvania in 1922.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 20, 1926.

Incidence of Silicosis in the Pottery Industry

The report of an important investigation on the incidence of silicosis in the pottery industry, instituted by the government, has just been published. Some interesting facts have been elicited by the investigation. Thus silicosis has been found, not only among those exposed to the inhalation of dry flint dust, but also in occupations such as the manufacture of earthenware, in which sand is used instead of flint; in flint-milling processes, in which the material is wet, and in processes of manipulating the ware in the clay state before firing. Uncombined silica in the form of flint or quartz is the important factor in causing serious respiratory disease in the industry. It appears that fibrosis of the lungs has been frequently diagnosed by medical examination earlier than silicosis has been found by roentgenologic examination in the same occupational group. Of 344 males and 224 females examined, silicosis was found in seventy-six males and in eleven females. Roentgenography was employed to assist the clinical inquiry in nearly half the cases. Pulmonary fibrosis was diagnosed by medical examination at an earlier period than that at which silicosis was visible in the roentgenogram. This contrasts with the finding of the miners' phthisis bureau of South Africa, where roentgenography gave the most certain indications, but pottery dust, which may contain flint, ball clay and china clay, may give a different pathologic picture. The persons examined were actually at work; hence tuberculous infection, which rapidly incapacitates, was not a feature of the cases seen and sputum examinations were not made. Evidence of tuberculous infection in cases of silicosis must rather be sought among mortality statistics than among operatives at work. On account of longer periods of occupational life, more males than females were found with silicosis; where the dust was of unmixed flint, 32 per cent of the men examined were affected; where the dust was composite, 24.7 per cent were affected; but in other groups the disease was far less prevalent.

The Treatment of After-Effects of Epidemic Encephalitis: A London Experiment

The metropolitan asylums board has decided to continue for another year the work of the Postencephalitis Lethargica Experimental Unit. It was instituted a year ago, and 133 patients have been admitted. Forty were discharged, and of these, twelve were much improved, six were in such a condition that they were unlikely to improve by further treatment, four cases were unsuitable, and eighteen were discharged at the request of the parents. Deaths did not occur. The experimental unit is for children between the ages of 3 and 16 years, with the object of ascertaining whether anything can be done to improve the condition of these distressing cases. The unit has not been productive of any very positive curative results so far, and its future value may well be that of a clearing house for patients suffering from any of the many residuums of epidemic encephalitis, where they might be classified and allocated in various ways. Dr. Borthwick, the medical superintendent, states that children showing psychic changes constituted the majority of cases, and all types were found from the practically normal to those who had almost maniacal outbursts. The milder cases have done well under the ordinary discipline of the unit, exercised as it was both day and night. The children were away from their home surroundings, where many of them had been either

spoiled or brutalized. These patients should have a period of residence at the hospital school and, as their condition improved, be discharged to their homes, where they could attend special classes at an ordinary school with ultimate hope of ordinary citizenship. The more severe cases showing querulousness, outbursts of temper, lying, thieving and sexual erotism improved slightly under treatment, but so slowly and with so many relapses that the prognosis had to be guarded. The present opinion is that there would at once be a relapse if these children were sent to their old surroundings, and they would rapidly become involved in difficulties, either morally or criminally. Dr. Borthwick considers that some more or less permanent institutional treatment on the lines of the hospital school will be required for these children, and when they are 16 they will have to be drafted into some industrial colony, where occupational handwork can be given them under direct control, for they are extremely difficult to manage and will not work continuously at anything unless they are under such control. The patients with maniacal outbursts should be placed in a wing of a psychopathic hospital where constant supervision is possible. For the hopelessly bedridden, as a result of paralysis, parkinsonism, or hypertonic muscular contractures, little could be done except in the way of massage, special splints and surgical shoes. Most of the patients with nocturnal restlessness settled down under ordinary disciplinary measures. Others, however, had to be given sedatives and mild hypnotics. Suggestion has played its part, and some children slept quite peacefully after receiving a hypodermic injection of sterile water. Cases of endocrine disturbances and patients with respiratory disturbances showed little improvement, or none at all, but if psychic changes had not taken place, they might be treated at home and attend a school for physical defectives.

Injury to Health by Smoke

At the Institution of Fuel Technology, Dr. J. S. Owen, of the advisory committee on atmospheric pollution, air ministry, read an important paper on "Smoke and Public Health." He said that approximately two and a half million tons of soot are produced a year and distributed broadcast over the country. Of this, 500,000 tons consist of tar. From the 40,000,000 tons of coal burned in domestic fires, there are produced each year about 900,000 tons of sulphuric acid, which is mostly brought down by the rain to poison the soil and destroy our buildings. In addition, two or three million tons of soot are produced from our industrial furnaces. The domestic fire is far the worst for smoke production. Domestic soot is highly charged with tar, whereas tar is almost entirely absent from industrial smoke. The period of greatest smoke production is during the lighting up of the fires. A curve showing smoke pollution in London revealed a rapid rise in the early morning, culminating before midday, followed by a gradual fall, checked at about 7 to 8 p. m. The only comparatively clean period is between midnight and early morning. The business man arriving in London about 9 a. m. and leaving about 6 p. m. is there for the very worst period of the day. Perhaps he got down to the country thinking that he had escaped the city smoke, but often he would be very little worse off if he slept in the city. The impurities deposited are only a part of the story. Much of the finely divided sooty matter remains in suspension to form the haze which commonly exists over our cities, cutting off the sunlight. On an ordinary winter's day in London, there are in the atmosphere about 2,000 to 3,000 particles per cubic centimeter, rising to from 50,000 to 100,000 during dense smoke hazes. They entered the air passages with great facility. Dr. Owen considers it little protection to breathe through the nose. Periods of dense fogs in cities prove very injurious to health. The gloom over a city and the reduction of daylight is very depressing and tends to lower the vitality, making people less resistant to the attacks of diseases. The conditions have come on us so gradually that the curious adaptibility of human nature to environment has made it appear comparatively natural. It is not possible yet to say just what amount of ultraviolet radiation is essential for health, but it is certain that many city dwellers receive less than is required. Finally, Dr. Owen considered a clear statement desirable on the authority of fuel technologists, showing the present position with regard to smoke prevention, so that the public would know authoritatively what is technically possible.

War Babies Handicapped

Mr. R. B. Wright, headmaster of Nottingham Mundella School, states that children born during the war and in the years immediately following it are suffering from physical and mental handicaps—inertia due to the hardships of wartime, which reflects itself in their intelligence and general application to work. He does not consider that the standards of entrants to his school will become normal until 1931. Dr. Cyril Norwood, headmaster of one of the famous public schools of England (Harrow), thinks that there are individual cases in which Mr. Wright's view is true but that it does not apply generally.

PARIS

(From Our Regular Correspondent)

Dec. 15, 1926.

The Centennial Celebration in Honor of Laënnec

Laënnec died, Aug. 13, 1826. Two celebrations have recently been held in his honor. The first took place in August, in Brittany, where Laënnec was born and where he lies buried (THE JOURNAL, Sept. 18, 1926, p. 954); the second was transferred to Paris, where Laënnec studied medicine and passed his scientific career. During the three-day celebration in Paris, Laënnec was extolled by numerous speakers. The president of the republic and the entire diplomatic corps attended the opening session. Many foreign delegates were present as representatives of their governments or their universities. Dr. Thayer of Baltimore was chosen as a single representative to speak in the name of the foreign delegates. He emphasized that the scientists of all countries owed Laënnec a debt of gratitude.

In his address, M. Lapie, rector of the University of Paris, described the first years of study of Laënnec, who became an army surgeon at the age of 14. Dr. Ménétrier, professor of the history of medicine at the university, gave an account of Laënnec's discovery of auscultation. He told the well known story of Laënnec crossing the court of the Louvre and stopping to watch some children at play, one of whom was scratching with a nail the end of a long piece of timber, while another stood with his ear glued to the other end of the beam. This chance observation led to the discovery of the stethoscope. At the time the children attracted the attention of Laënnec, he was on his way to make a professional call on a young woman patient whom he wished to examine by auscultation. In keeping with the false modesty of the times, the young woman refused to permit auscultation. Recalling the incident of the morning, Laënnec took from the table a writing tablet, formed it into a scroll, and applied one end to his ear and the other end to the thorax of his overtimid patient. The roll of paper was the first stethoscope. Laënnec constructed various types of his instrument, which was at first a cylinder of thin wood, later a tube, which he widened and made funnel-shaped at both ends. He made it of two pieces that fitted one within the other, to be more easily carried in the pocket of the practitioner. Being a

skilful wood-turner, he made all his models himself. His "Traité d'auscultation médiate" appeared in 1819. Owing to illness, Professor d'Arsonval's discourse was read by Professor Gley. He was the representative of the Collège de France, in which institution Laënnec first taught. He referred to the fact that his father had been Laënnec's pupil. Professor Roger, dean of the Faculté de médecine, recounted the life of Laënnec at the University of Paris, in which institution he was enrolled as a student, in 1801. The medical school was closed, in 1821, by order of the king, owing to political disorder caused by the students. Laënnec was asked to serve on the committee that reorganized the school when it was reopened. He sought in vain to have reappointed the professors who had been dismissed. However, he himself was honored with a call to a chair. His opinionated character caused him to make many enemies. For the first fifteen years after his death, Laënnec was almost forgotten, but then, gradually, through a change in public opinion he was again accorded the recognition his merit deserves.

Prof. Léon Bernard, specialist in tuberculosis, pointed out that tuberculosis was completely described by Laënnec. With the exception of the micro-organism, Bernard explained, he had seen and understood the whole process. M. Painlevé, minister of war, who served as chairman of the meeting, recalled that Laënnec had received his first intellectual training within the compass of military medicine.

The day following (December 14), M. Herriot, minister of public instruction, served as chairman. After an address by Professor Bard, president of the academy for the current year, Professor Mirallié, director of the Ecole de médecine of Nantes, where Laënnec first carried on his studies, spoke of the scientist's youth and of his family. Professor Letulle, professor of pathologic anatomy, showed the value of Laënnec's discoveries in that field of inquiry. Unfortunately, Laënnec was compelled to abandon the treatise on pathologic anatomy which he had begun, and to confine his attention to practice, in order to support his family. Professor Sergent, physician to the Charité Hospital, where he is director of Laënnec's former service, described the work of the latter as a clinician. He expressed the fear that the future would not produce scholars of his general culture now that classic training is less emphasized. Professor Achard, general secretary of the academy, and a successor to Laënnec in the chair of clinical medicine, spoke of the clinical method and of the solid basis that anatomic observation and the exploration of symptoms give to diagnosis. Laënnec was the creator of this method, which was further developed by Claude Bernard. M. Herriot closed the session with a somewhat literary discourse, in which he spoke of Brittany, compared Laënnec with Chateaubriand, who was sprung from the same province, and explained his peculiar type of genius as a product of his race.

The Medical Examination of Chauffeurs

Before the chamber of deputies, in connection with the discussion of the budget, M. Merlin requested of M. Tardieu, minister of public works, that the automobile license examinations be made more strict. He made the request in the interest of public safety, and referred to numerous accidents in which the public had suffered, owing to the fact that chauffeurs affected with heart disease or diseases of the nervous system, or with disorders of vision had been granted permits that should have been refused. He recommended that periodic examinations be required to determine whether diseases that impair their occupational efficiency had not developed since the issue of their licenses, whereas at present a license to drive is valid until revoked. The same methods should be applied to chauffeurs that have been employed for some time in the air service, and that are beginning to be used in the instance of locomotive engineers and street-car motormen. The minister replied that at present 1,600,000 persons in France were holders of permits; that M. Merlin's suggestion was well founded and altogether praiseworthy, but that he was unable to see how he could procure the funds and the necessary medical personnel to require a reexamination of permit holders, much less to institute a system of periodic examination of so vast a number of drivers. However, it has been decided to require a more thorough medical examination as the basis for the issuance of the first permit.

Disability in Epileptics

Addressing the Société de psychiatrie recently, Dr. Ceillier discussed the question of disability in epileptics. A considerable percentage of all delinquents are epileptics, being the authors of thefts, homicides and assault. Their condition presupposes a relative unaccountability. Frequently, epileptics are under the temptation to disregard social laws when they are without resources, because they are seldom retained long in any employment. They are dismissed from offices and shops for the reason that they are liable to inflict injury on themselves or their fellow employees, which brings losses to their employers under the workmen's compensation act. Thus thrown on the street, they resort to begging and theft and become involved with the police. There is a record of one epileptic who received forty-eight sentences. M. Ceillier recommends that the cases of these occasional and not professional delinquents be investigated with greater care, and that an endeavor be made to provide agricultural employment for them where they would be supervised and where they could make a living.

BUENOS AIRES

(From Our Regular Correspondent)

Oct. 30, 1926.

Second Medical Education Meeting

The Second South American Conference was held, July 15-17, at Buenos Aires. Delegates from Brazil, Uruguay, Peru, Bolivia and Paraguay attended, in addition to those from this country. The members of the committee on resolutions were: Profs. J. Da Rocha Vaz (dean of the Rio de Janeiro Medical School), D. J. Cranwell (dean of the Buenos Aires Medical School), Pou and Orfila (of Montevideo). A resolution recommended that full-time professors be appointed for basic subjects. Internship was declared essential to medical training. It was advised to limit the number of enrolled students according to the available teaching facilities. There was much discussion as to the advisability of uniting obstetrics and gynecology from a pedagogic standpoint. Public health in various countries was discussed by Professor Carbonell of Buenos Aires, Dr. G. Strode of São Paulo, and Prof. A. Berta of Montevideo. Methods used to teach other subjects were discussed: psychiatry, Santin Rossi, P. Loudet; pathology, J. Llambías; biologic chemistry, J. A. Collazo.

Conference on Pathology

At the suggestion of Dr. Salvador Mazza, assistant professor, a Northern Pathology Society has been organized, which alternates its meetings between Tucumán, Jujuy and Salta. The society has succeeded in getting local physicians interested in the study of regional diseases. The provincial authorities are backing the enterprise, and the Jujuy authorities have appropriated 30,000 pesos (about $12,300) toward the construction of a research laboratory. All the expenses of this work had so far been borne by the surgical laboratory of the Buenos Aires medical school. The third and last meeting of the society was held at Salta. The papers touched on a variety of subjects: granular conjunctivitis in the rabbit and the origin of trachoma, by Prof. C. Nicolle of

Tunis; nontransmissibility of syphilis to the llama, by Bachmann and Puente; new sand flies, by Paterson and Shannon, and by Mazza; berberin in malaria, by Waldorp; ancient American historical records on treatment of hookworm disease and malaria, by Dominguez; leishmaniasis, by Bernasconi; *Rhinosporidium seeberi*, by Parodi; carbon sulphite in hookworm disease, by Castillo Odena; pernicious anemia, by Bianchi; influenza at a height of 4,600 meters over sea level, and a number of other papers on malaria, cancer and various parasites of man and animals.

Treatment of Surgical and Pulmonary Tuberculosis

For several years Assistant Professor C. Robertson Lavalle has been applying a method of his own in the treatment of bone tuberculosis. In operating in tuberculous epiphyses his attention was attracted to the dark blackish tint of the blood. This suggested to him the existence of circulatory stagnation and the need of aiding the blood return and local oxygenation, thus decreasing the virulence of the tubercle bacillus. Regardless of the tenability of this theory, he began applying his method. This consists in trephining obliquely from the shaft to the end until the joint is approached; then a bone peg is inserted in this bed to hasten blood repair and recalcification. His series keeps on increasing and he claims amazing results, as many patients can walk and even run before the month is over. This work has been extensively described and praised in the newspapers. In medical journals two confirmatory reports have been published by R. Solé and A. Zeno. Local surgeons seem at variance, and some of the most prominent prefer to withhold their final opinion. The favorable results have encouraged Robertson Lavalle to extend his method to pulmonary tuberculosis, and he has announced his purpose of doing likewise with visceral types of the disease.

Academy of Medicine

The Academy of Medicine is constantly increasing its importance. Lectures were delivered this year by Pittaluga of Madrid, Ascoli and Alessandrini of Rome, Delbet of Paris, Couto of Rio de Janeiro, Sergent of Paris, and Magalhães of Rio de Janeiro. This institution is planning to erect a new and large building on the ground given by Dr. M. Herrera Vegas. It has also under consideration the establishment of foreign fellowships for graduate physicians. Dr. M. R. Castex has just been elected a member on his return from the United States.

PRAGUE

(From Our Regular Correspondent)

Dec. 1, 1926.

New Penal Code

The ministry of justice has proposed a new penal code with the purpose of inviting discussion before the proposal is brought before the parliament. The paragraphs that deal with sexual pathology adopt to a certain extent a novel attitude. One stipulation is the provision that homosexual relations between adults be not punishable. This attitude has been adopted because modern research in sexual pathology has shown that homosexuality is an inherited perversity for which the individual concerned is not responsible and which often results in serious disturbances in the mental make-up of that individual in case his instinct continually drives him into collisions with the law. This measure is generally considered a wise one and does not meet serious opposition. Severe measures are adopted in cases in which the persons concerned are not of age. The reason for this is that in the individuals who are on the boundary of normal and abnormal sexual inclinations, early sexual experiences often determine future sexual habits. If these individuals were not protected by law, those who are not quite lost to the normal sexual life might be diverted into homosexuality. Such measure seems wise, especially because homosexual individuals tend to organize themselves into societies which at present are secret because they are against the law but which do not deny that their purpose is the facilitation of homosexual relations. The penal code extends the age limit of protection from 14 to 18 years. In Spain, Portugal and Italy the age limit is 12, and in France, 13 years. The new provision points out that conditions in southern Europe cannot be compared with those in Czechoslovakia because climatic differences influence sexual maturity and the whole course of the sexual life.

Other provisions of the penal code are that zoophily is not punishable, and that mandatory capital punishment is to be abolished in case a physician has killed a patient in order to abbreviate the suffering imposed by incurable disease. In such cases, the imposition of capital punishment is left to the discretion of the judge and complete acquittal is made possible. The code also exempts from punishment a physician who kills a fetus with the consent of the mother in cases in which it is done for one of the following reasons: (1) to obviate imminent danger to life, or serious injury to the physical condition of the mother; (2) when the impregnation has resulted from rape; (3) if there is good reason to believe that the child which would be born would be afflicted with a serious mental or physical malady; (4) if the woman under consideration has already three children alive and for which she has to provide, and (5) if the mother has gone through childbirth five times and her social condition is such that the birth of another child would seriously endanger the financial condition of the family. If the woman under consideration is feebleminded or insane it is necessary to obtain the assent of the guardian to the measure.

Visit of Physicians to Poland

From October 21 to November 6, about fifty members of the Young Generation of the Central Union of Czechoslovak Physicians went on an official visit to the Polish medical profession. The group first visited Warsaw, where university clinics and sanitary institutions were inspected. Special interest was devoted to the school of hygiene, which is the first of its type on the continent. While the equipment of the university clinics was defective on account of lack of funds, Poland has surpassed Czechoslovakia in the organization of public health service. This service is in the hands of young officers, many of whom have been trained in the United States as fellows of the International Health Board of the Rockefeller Foundation. In Wilno the efficient scientific association of physicians is 120 years old, and has counted among its members many a world known personage. Poland needs central and uniform organization of the medical profession, which is at present split into several groups with aims of too political a nature. Czechoslovakia has an efficient national organization, but Poland surpasses Czechoslovakia in the number of scientific societies which are forcefully represented in congresses. Posen's excellent school of physical education has a counterpart in an institution that is just being organized in Prague. The last city to be visited was Cracow, where the modern sanitary institutions were inspected. This trip will strengthen the relationships between the medical profession of Czechoslovakia and that of Poland. The Czechoslovak group contained the editors of the Czechoslovak medical periodicals because it was realized that through them mutual ties can be most effectively formed.

International Association of Slavic Physicians

Before the war the need was felt for closer cooperation between the physicians of Slavic nations. There were other than political reasons for closer cooperation. It requires very little practice on the part of a member of any Slavic nation to become so familiar with another Slavic language that he

can study scientific publications in the foreign language. On the other hand, the Slavic literature is practically inaccessible to the western nations. Consequently the publication of Slavic achievements in medicine in western literature is difficult. Solution of this problem for a number of Slavic nations working together would be less expensive and more efficient than if undertaken separately by each individual nation working alone. Two congresses of Slavic physicians were held before the war, in 1900 and in 1908. At these congresses the statutes for an international association of Slavic physicians were elaborated. The first congress after the war was held in Belgrade. Jugoslavs, Poles, Czechoslovaks, Bulgarians, Ukranians and Russians attended. The Russians presented only the Russian emigration and not bolshevistic Russia. Besides organizational matters, the congress was concerned with tuberculosis among the Slavic nations. It was decided that the International Association of Slavic Physicians shall be put on a new basis and that the first congress of the new association shall be held in Warsaw, in May, 1927. The committee that was appointed to draw up the statutes of the association will meet in Prague in the second half of December and will report to the congress when it meets in Warsaw. The whole trend is toward elimination of political elements and emphasis exclusively on scientific matters. Owing to the recent and numerous changes in the make-up of the different Slavic countries, this effort is naturally encountering many difficulties, but it is hoped that time will smooth them out as the whole situation in Europe becomes stabilized.

Vital Statistics

The figures published by the statistical service of Czechoslovakia for the first six months of 1926 indicate a considerable rise in mortality, although the general trend of mortality has been continuously downward since 1922. There was an increase of 4.37 per cent for the first half of the year as compared with the same period of last year. The greatest increase is to be noted in the eastern half of the country. The rise in general mortality is caused largely by increase in deaths of infants and young children. Infant mortality increased in this period by 6.3 per cent, the mortality of the children in age group 1-5 years by 14.99 per cent, in age 5-14 by 6.04 per cent. A slight increase is also noticeable in the last decades of life, while the mortality of middle age remained constant. As to the causes of death, respiratory diseases, heart disease, cancer, whooping cough and influenza are of outstanding importance. The birth rate during this period continued to decline, chiefly in the western half of the state. The small increase in births of the eastern half of the country could not offset this.

Adoption of Milk Code

The city of Brno is the first one in Czechoslovakia that has adopted a modern milk code. The milk supply in most European cities is far below American standards. The inferiority of the supply lies not only in the manner of the production of the milk but especially in the way in which it is distributed. Dr. J. Jurena, who is the chief of the state institute for the control of foods in Brno, studied American methods of milk control during his visit to the United States. His effort to improve the milk supply of Brno were first directed against dilution or skimming of milk. This was a common practice not only in the dairies but also in the small shops in which milk is sold. The fat content of milk was set officially at 2.8, which opened the door to fraudulent practices. Watering of milk was demonstrated in more than three fourths of the samples examined. Numerous prosecutions which followed this disclosure resulted in marked improvement of the fat content of the milk and won public interest in spite of opposition on the part of the dealers. The milk code will be put in force, January 1, and milk is not admitted to sale in the city unless it has a minimum fat content of 3.5 per cent. The specific gravity of the milk must be between 1.028 and 1.035 at 15 C. Cream must have a minimum fat content of 25 per cent. The product that bears the inscription of pasteurized milk must be submitted to a temperature of from 62 to 63 C. over a period of thirty minutes, or 85 C. during three minutes. The bacterial content must not exceed 20,000 per cubic centimeter when put out by the dairy and must be above 50,000 per cubic centimeter when delivered to the customer. The milk code also prohibits certain practices in handling the milk. Those who sell milk must have a license from the city health department. Because it is impossible to order the sale exclusively of bottled milk, the method of handling the unbottled milk is specified in detail. Although the standards set forth in the code do not as yet attain to American standards, the improvement in the milk supply of the city of Brno is so striking that other cities are trying to imitate its measures.

BERLIN

(From Our Regular Correspondent)

Dec. 18, 1926.

Accidents in Mines

For the first time, the Prussian ministry of commerce has published detailed statistics of accidents in Prussian mines, the pamphlet covering accidents occurring in 1925. The report reveals that, in spite of all safety measures, the number of accidents is still high. In the coal mines of Prussia (exclusive of the lignite fields) about 15 per cent of all miners, or 82,213, suffered some accidents in 1925 while under ground. The number is increased by accidents happening above ground to a total of 97,749; 1,320 of the accidents ended fatally. In the lignite fields, in which danger is less than in the black-coal fields, the number of accidents was relatively lower. The total in 1925 was approximately 10,000, only 126 of which resulted fatally. The number of accidents in the ore mines was 3,407, with seventy-five deaths. Including the salt mines and the petroleum wells, the total number of accidents in the mining industries in Prussia in 1925 amounted to 113,169, which resulted in 1,564 deaths. The mining district about Dortmund shows the greatest number of accidents (74,224), with 1,093 deaths. In descending order, the districts about Breslau, Bonn and Halle follow. The year 1926 does not seem to offer much prospect of improvement, for during the first quarter 26,688 accidents were recorded, 285 of which proved fatal. The Prussian ministry of commerce plans to publish these statistics at definite intervals.

Hygienic Dwellings for the Tuberculous

The committee on housing appointed by the German and Prussian better homes association has endorsed the following criteria of the welfare committee: 1. In order to combat tuberculosis successfully, suitable dwellings for patients are needed. 2. The establishment of isolated settlements or villages for tuberculous patients is, as a rule, inadvisable. 3. It is preferable to build dwellings for the tuberculous that comply with hygienic requirements as to location and mode of construction, close to other habitations, instead of detached. 4. In determining the rents, the financial condition of tuberculous families, which is, as a rule, below the average, must be taken into account. 5. Dwellings built for tuberculous patients should be rented only to families in which tuberculosis is present. The hygienic requirements applicable to dwellings for the tuberculous are summed up in the following criteria as proposed by Stadtmedizinalrat Dr. von Drigalski: (*a*) As most dwellings for the tuberculous will be occupied by families, they should comprise not less than three rooms, with toilet, and, if possible, bathing facilities (shower). (*b*) The rooms should be exposed to direct sun-

light; a northern exposure should be avoided; it is an advantage for the rooms, or at least one of them, to have a southern exposure; otherwise the dwelling should be so situated that there is an abundance of windows on the east and west sides. A room facing the south, with a small *loggia* or a covered balcony, is especially desirable. If that is not feasible, a projected window coming down to the floor, which can be opened as a door, may be provided. (*c*) Wide windows are to be preferred, and at least one window in each room should have the upper sash so adjusted that it can be readily tipped open for ventilation purposes. The use of small or narrow window for architectural effect is not permissible. (*d*) Every room must be heatable. (*e*) A tuberculous person should have a sleeping room to himself, even though it be small. (*f*) Unlighted chambers or alcoves should not be provided for sleeping purposes. (*g*) The size of rooms should not be reduced beyond a certain minimum. It is relatively more important to provide adequate floor space than it is to make the ceilings especially high. (*h*) The formation of dark corners should be assiduously avoided. The walls and the floor should not meet at right angles; the intersections should be rounded out, so as to dispense with mopboards. (*i*) The floors should be as smooth as possible. (*j*) The interior finish should be as light as possible; wall paper should not be used; the walls should have a washable coating. (*k*) Built-in cupboards and kitchen arrangements after the custom in the Netherlands are recommended. (*l*) The door-knobs should be smooth and without ornamentation. (*m*) A small yard for outdoor work and rest is desirable.

General Paralysis in Negroes and Indians

Professor Kraepelin, psychiatrist, recently deceased, and his co-worker Professor Plaut, made, in the spring of 1925, a study tour of America lasting several months, for the purpose of investigating the relation of general paralysis to syphilis among Indians and negroes. Plaut has now published a report on their observations among Indians and negroes in the United States, Mexico and Cuba. Among the negroes of the United States, the incidence of syphilis is from two to three times as great as among the white population. Negroes are apparently just as subject to general paralysis as the white race. General paralysis among the negroes in Cuba, in spite of widespread syphilis, appears to be exceedingly rare. Among the Indians of the United States, general paralysis is a pronounced rarity but does occur. Syphilis, however, is not uncommon among them. Adequate explanation of these facts is not as yet available. Among the Mexican Indians, syphilis is widely prevalent; the incidence among them of general paralysis, at least as far as the large cities are concerned, is not essentially different from the figures established in the large cities of Europe. In spite of the recently heralded contention that smallpox vaccination "serves as a pacemaker for general paralysis," general paralysis developed in a group of seven negroes and Indians who had never been vaccinated.

Marriages

FRANCIS MANN CLARKE, JR., New Brunswick, N. J., to Miss Edith May Sunday of Pottsville, Pa., Dec. 27, 1926.

MIHRAN MISSIRLIAN, Providence, R. I., to Miss Mary Peprom Ateshian of Detroit, Oct. 10, 1926.

I. MILTON WISE, Mobile, Ala., to Miss Virginia A. Morgan of Lexington, Ky., Dec. 29, 1926.

HOWARD SAMUEL MYERS to Miss Clara Olive Beck, both of Massillon, Ohio, Sept. 30, 1926.

JOHN KEIFFER WICKER to Miss Ola Belle Tolbert, both of Newberry, S. C., Dec. 28, 1926.

Deaths

Charles Melvin Harpster ⊕ Toledo, Ohio; Toledo Medical College, 1896; member of the American Urological Association; Spanish-American war veteran; on the staffs of the Toledo and St. Vincent's hospitals, and formerly on the staff of the Lucas County Hospital; delegate to the International Congress on Syphilis, Rome, Italy, 1912, the Clinical Congress of Surgeons, London, 1914, and the International Congress on Tuberculosis, Rome, 1922; formerly secretary and chairman of the section on genito-urinary surgery of the Ohio State Medical Association, and a frequent contributor to medical journals; aged 53; died, Dec. 24, 1926, at Battle Creek, Mich., of cerebral hemorrhage.

Joseph McDowell Patterson ⊕ Kansas City, Mo.; Pulte Medical College, Cincinnati, 1887; professor of ophthalmology, otology and laryngology, Kansas City Hahnemann Medical College; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 61; formerly on the staff of St. Mary's Hospital, where he died, Dec. 6, 1926.

William Foote Whythe ⊕ Madison, Wis.; Chicago Medical College, 1874; for twenty-six years member and for twenty-one years president of the Wisconsin State Board of Health; served during the World War; formerly curator for the Wisconsin Historical Society; aged 75; died, Dec. 25, 1926, of carcinoma of the prostate.

William Thaddeus Young, Allensville, Ky.; Vanderbilt University Medical Department, Nashville, 1887; member of the Kentucky State Medical Association; aged 62; died, Dec. 5, 1926, of heart disease, following a cerebral hemorrhage suffered sometime ago.

Sydney S. Wilson ⊕ Nebraska City, Neb.; State University of Iowa College of Medicine, Iowa City, 1893; president and formerly secretary of the Otoe County Medical Society; aged 56; died, Dec. 16, 1926, when the automobile in which he was driving overturned.

Chester Howard Elliott ⊕ Denver; University of Colorado School of Medicine, Denver, 1916; member of the American Society of Clinical Pathologists; assistant professor of pathology at his alma mater; aged 38; died, Dec. 8, 1926, at St. Luke's Hospital.

Edwin Garvey Kirk ⊕ Chicago; Rush Medical College, Chicago, 1909; formerly professor of pathology and bacteriology, Bennett Medical College, Chicago, and Loyola University School of Medicine, Chicago; aged 48; died, January 1, of chronic nephritis.

John Chew Applegate ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1887; professor of obstetrics, Temple University Department of Medicine, Philadelphia; on the staff of the Samaritan Hospital; aged 65; died, Dec. 20, 1926, of heart disease.

Frederick A. Busjahn, Logansport, Ind.; Bellevue Hospital Medical College, New York, 1879; formerly county coroner, member of the city council and secretary of the board of health; aged 70; died in December, 1926, of cerebral hemorrhage.

Cassius Perkins Byington ⊕ Ossining, N. Y.; Albany Medical College, 1882; past president and secretary of the Westchester County Medical Society; for many years on the staff of the Ossining Hospital; aged 67; died, Dec. 19, 1926, of pneumonia.

Charles James McGovern, San Francisco; State University of Iowa College of Medicine, Iowa City, 1886; past president and secretary of the San Luis Obispo County Medical Society; aged 64; died recently, of dilatation of the heart and chronic nephritis.

Harry Homer Harlan, Red Lake, Minn.; Medical Department of the National University of Arts and Sciences, St. Louis, 1912; for twelve years physician in the Indian Service; aged 43; died, Oct. 3, 1926, of melanosarcoma of the neck.

Henry Everett Emerson, Milford, Pa.; Medical Department of the University of the City of New York, 1892; formerly a druggist; for thirty-five years member of the board of education; aged 60; died, Nov. 22, 1926, following a thyroidectomy.

Arthur L. Holcombe ⊕ Compton, Calif.; Medical Department of the University of the City of New York, 1888; aged 61; died, Nov. 2, 1926, at the Seaside Hospital, Long Beach, of chronic myocarditis and hypostatic pneumonia.

Eloise Meek, Bellefonte, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1899; served as a medical missionary in India for two years; aged 51; died, Dec. 20, 1926, at the Clearfield (Pa.) Hospital, following an operation.

James William Thayer ✠ Gilroy, Calif.; College of Physicians and Surgeons, Keokuk, 1879; for many years city health officer and for thirty-five years deputy county health officer; aged 72; died, Nov. 12, 1926, of coronary embolus.

William Edmund Daley, Halifax, Nova Scotia, Canada; Dalhousie University Faculty of Medicine, Halifax, 1920; aged 29; died, Sept. 29, 1926, as the result of injuries received in an automobile accident several months ago.

Thomas Eugene McArdle, Washington, D. C.; Georgetown University School of Medicine, Washington, 1879; member of the Medical Society of the District of Columbia; aged 74; died, Dec. 16, 1926, of bronchitis and asthma.

Bayard T. Dickinson, Steelton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1876; member of the Medical Society of the State of Pennsylvania; aged 72; died, Nov. 30, 1926, following a long illness.

William W. Rowan, Ouray, Colo.; College of Physicians and Surgeons, Baltimore, 1878; formerly president and member of the state board of medical examiners; aged 77; died, Nov. 19, 1926, at a hospital in Salida.

Charles A. Clements, Buffalo; University of Buffalo Department of Medicine, 1893; member of the Medical Society of the State of New York; aged 63; died, Oct. 14, 1926, at the General Hospital, of heart disease.

John Thomas O'Brien ✠ San Francisco; University of California Medical School, San Francisco, 1896; aged 63; died, Dec. 27, 1926, at the Franklin Hospital, of chronic nephritis and chronic myocarditis.

James Marion Dennis, Cotton Valley, La.; Atlanta College of Physicians and Surgeons, 1904; aged 47; was killed, Nov. 22, 1926, when the automobile in which he was driving plunged over an embankment.

Michael Francis Gallagher, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1903; on the staff of St. Joseph's Hospital, where he died, Dec. 28, 1926, of pneumonia, aged 45.

Tancrede Boucher De Grosbois, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1868; for twenty-three years on the staff of St. Jean de Dieu Hospital; aged 79; died recently.

Smith D. Low, Pekin, Ill.; Eclectic Medical Institute, Cincinnati, 1882; Homeopathic Medical College of the State of New York, 1884; aged 66; died at Dallas, Texas, Dec. 11, 1926, of pneumonia.

James Lafayette Koch, Boston; University of Pennsylvania School of Medicine, Philadelphia, 1895; physician in charge of the Cambridge Relief Hospital; aged 53; died, Dec. 20, 1926, of carcinoma.

John Dunfield, Petrolia, Ont., Canada; Trinity Medical College, Toronto, 1878; formerly mayor of Petrolia; at one time chairman of the board of education; aged 78; died in October, 1926.

Isaac Webb Surratt ✠ Belspring, Va.; Medical College of Virginia, Richmond, 1908; formerly secretary of the Pulaski County Board of Health; aged 52; died, Oct. 20, 1926, of heart disease.

William E. Jewett, Sr., Adrian, Mich.; Homeopathic Medical College of the State of New York, 1867; aged 84; died, Dec. 23, 1926, of shock and exposure following a fall from a window.

Henry Molyneux Cullinan, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1903; aged 48; was instantly killed, Dec. 7, 1926, when struck by a motor truck.

George Walter Potts, Asbury Park, N. J.; University and Bellevue Hospital Medical College, New York, 1907; bank president; aged 48; died, Dec. 7, 1926, of chronic nephritis.

Lloyd Harrison McKim, Stockbridge, Mich.; University of Michigan Medical School, Ann Arbor, 1921; aged 30; was instantly killed when struck by an automobile, Dec. 10, 1926.

Jose Esteban Saldana, San Juan, P. R.; University of Brussels, Belgium, 1889; member of the Medical Association of Porto Rico; aged 66; died, Oct. 9, 1926, of angina pectoris.

James Coolidge, Charles City, Iowa; Rush Medical College, Chicago, 1880; member of the Iowa State Medical Society; aged 67; died in December, 1926, of cerebral hemorrhage.

Alfred S. Rummell, Springvalley, Ill.; College of Physicians and Surgeons, Keokuk, 1897; Spanish-American war veteran; aged 68; died, Dec. 13, 1926, of heart disease.

Palmer Nathanael Fenger, Askov, Minn.; University of Copenhagen, Denmark, 1888; aged 64; died, Nov. 18, 1926, at St. Mary's Hospital, Duluth, of chronic myocarditis.

William McCracken ✠ Pittsburgh; New York Homeopathic Medical College and Hospital, New York, 1891; aged 60; died, Dec. 18, 1926, of cardiovascular renal disease.

Peter Janss, Los Angeles; Bellevue Hospital Medical College, New York, 1885; aged 68; died, Nov. 18, 1926, at the California Lutheran Hospital, of heart disease.

Charles L. Metz, Cincinnati; Miami Medical College, Cincinnati, 1871; member of the Ohio State Medical Association; aged 79; died, Dec. 21, 1926, of heart disease.

Robert Martin Bruns, New York; Johns Hopkins University Medical Department, Baltimore, 1902; aged 50; died, Dec. 24, 1926, of a streptococcus infection.

John McCulloch, Lindsay, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1901; aged 54; died in October, 1926, following a long illness.

Ira E. Sanderson, Pittsburg, Kan.; Missouri Eclectic Medical College, Kansas City, Mo., 1898; aged 73; died, Oct. 24, 1926, at Kansas City, Kan., of uremia.

Alfred Russell Turnbull, Moose Jaw, Sask, Canada; McGill University Faculty of Medicine, Montreal, Que., 1886; died, Nov. 9, 1926, following a long illness.

Aydelotte Will Whealton ✠ Atlantic City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1899; aged 48; died, Dec. 13, 1926, of pneumonia.

Roy Wentworth Mathes ✠ Lynn, Mass.; Dartmouth Medical School, Hanover, N. H., 1906; served during the World War; aged 42; died, Dec. 14, 1926.

Marian MacMaster, Skaneateles, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 80; died, Nov. 30, 1926, of heart disease.

Justin Matthew Donnelly, Maumee, Ohio; Jefferson Medical College of Philadelphia, 1918; aged 32; was drowned, Dec. 13, 1926, in Silver Creek.

George Hayward Binney, Jr., Boston; Medical School of Harvard University, Boston, 1914; aged 40; died, Dec. 4, 1926, of bronchopneumonia.

James C. Pence, Lima, Ohio; Fort Wayne College of Medicine, 1882; aged 67; died, Dec. 20, 1926, at Altoona, Pa., of cerebral arteriosclerosis.

Charles Harold Schock, Philadelphia; Medico-Chirurgical College of Philadelphia, 1887; aged 65; died suddenly, Dec. 28, 1926, of heart disease.

Frank W. Smith ✠ Williamsburg, Ohio; Cincinnati College of Medicine and Surgery, 1896; aged 57; died, Nov. 14, 1926, of chronic nephritis.

M. Clayton Greene, Lowell, Mich.; University of Michigan Medical School, Ann Arbor, 1883; aged 70; died recently, of chronic myocarditis.

Joseph Slater Hunt, Easton, Pa.; Medical Department of Columbia College, New York, 1866; aged 90; died recently, of arteriosclerosis.

Daniel H. Leddy, Providence, R. I.; Baltimore University School of Medicine, 1905; aged 46; died in December, 1926, of alcoholism.

Argle MacClarren Scott, Louisville, Ky.; Louisville Medical College, 1884; aged 65; died suddenly, Dec. 15, 1926, of heart disease.

Lorin W. Lynde, Okarche, Okla.; College of Physicians and Surgeons, Keokuk, 1880; aged 79; died, August 7, 1926, of dysentery.

Frederick P. O. Roemheld, Milwaukee; Rush Medical College, Chicago, 1886; aged 74; died, Oct. 24, 1926, of heart disease.

Joseph Mark, Minneapolis (licensed, Minnesota, 1883); aged 74; died, Dec. 1, 1926, of myocarditis and arteriosclerosis.

Franklin A. Houser, Arkansas City, Kan. (licensed, Kansas, 1901); aged 70; died, Dec. 16, 1926, at Topeka, of paralysis.

James Lafayette Adams, Donalsonville, Ga.; Atlanta School of Medicine, 1907; aged 61; died recently, of endocarditis.

W. J. Conan, Milwaukee; Rush Medical College, Chicago, 1877; aged 82; died, Nov. 26, 1926, of heart disease.

Justin J. Leavitt, Portland, Ore.; Rush Medical College, Chicago, 1869; aged 84; died in November, 1926.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

CASS TREATMENT FOR RHEUMATISM

Another Piece of Chicago Mail-Order Quackery

One hundred and thirty-seven West Sixty-Second Street, Chicago, houses a choice line of quackery. Under the names "Western Medical Association" and "Vernon Laboratories," a fake "epilepsy cure" is exploited on the mail-order plan; under the name "Cass Laboratories," nostrums for rheumatism, sciatica, neuralgia, lumbago and gout are sold—also through the United States mails.

The Western Medical Association's nostrum for epilepsy has already been dealt with in these pages, and the article appears in a pamphlet dealing with fake "epilepsy cures." The stuff was essentially phenobarbital (luminal).

The Cass Laboratories (an imposing name for a medical mail-order quackery) lead their victims to suppose that they have as president one "Harvey L. Cass." There is no such person. There is, however, one H. L. Cassel, who, with his brother-in-law, one Joseph B. Creevy, conducts this mail-order nostrum factory. Creevy is also connected with the Western Medical Association outfit. Both Creevy and Cassel are said to have been previously connected with the Spiegel-May Stern Company, a Chicago mail-order house. Creevy, prior to that, seems to have been in the employ of a tailoring concern.

In the Cass advertising, the mythical "H. L. Cass" is played up as a "human interest" element. His picture appears freely and, in one of the series of follow-up form letters, signed "H. L. Cass," there is included what purports to be not only the picture of "H. L. Cass," but a photograph of his three small children—"Tom, Bob and Dick." Even a "Mrs. Cass" is dragged into this crude quack hunt for victims.

According to one of the form letters, a chemist who was associated with the non-existent "H. L. Cass," discovered, in 1921, the "Cass Treatment," which was "further developed under the direction of the Head Professor of Chemistry at one of the nation's largest Universities"!

Following the orthodox methods of mail-order quackery, the Cass concern reproduces what it calls a "$1,000 Guarantee Bond," artistically printed in the most approved standard bond-yellow. It reproduces, too, a letter from the Washington Park National Bank of Chicago certifying that the Cass Laboratories have deposited $1,000 in a separate account, which is to remain with the bank as proof of the ability of the Cass Laboratories to live up to the terms of their "guarantee."

According to the Cass system of pathology, the pains of rheumatism are due to the formation of "sand-like grit" that scratches and digs into the tissues. To cure rheumatism, therefore, "you've got to dissolve those hard gritty deposits and completely remove them from your body." Intriguing pictures of pathologic states, plausible to a degree to those who know no pathology, show in outline the human body, heavily charged with "hard gritty deposits," and the progressive stages of the "before and after" type, demonstrating how under the Cass "treatment" these deposits gradually diminish, become beautifully less and finally disappear. It is all very simple!

The Western Medical Association, in selling its mail-order "cure" for epilepsy, gave the impression that only "world-renowned Specialists" ever prescribed any such combination of drugs as it used—although it actually used a drug which physicians all over the country are prescribing in epilepsy (phenobarbital). The Cass concern has a similar ballyhoo for its nostrum. The claims, already mentioned, are still further fortified thus:

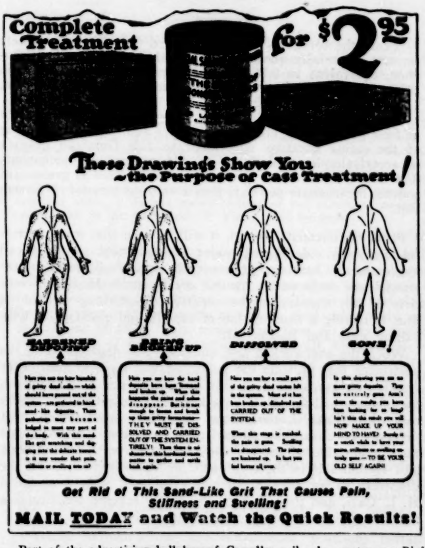
"Two of the foremost Medical Scientists in this country (whose names we are asked not to make public) have told us personally that Cass Treatment is superior to anything else known for Rheumatism, Sciatica, Neuritis, Neuralgia, Lumbago and Gout."

Any one familiar with mail-order quackery would, on the face of the Cass advertising, assume that these quacks merely used a combination of drugs commonly prescribed by physicians in the treatment of those conditions which we loosely call rheumatism. And analysis proves such an assumption to be a fact, as the laboratory report shows:

LABORATORY REPORT

"Two original 'treatments,' received from the Cass Laboratories, Chicago, were submitted to the A. M. A. Chemical Laboratory for examination. Each treatment consisted of a small packing box which contained (*a*) a pink box containing pink tablets; (*b*) a small carton labeled 'Special Saline Compound' containing a white powder, and (*c*) a blue box containing gray tablets.

"*Pink Tablets:* The pink box bore no descriptive name. The directions were: 'Take One (1) Pink Tablet With The Gray Tablets Before Each Meal And At Bedtime.' Each box contained fifty pink tablets; the average weight of each was 0.67 Gm. (10⅜10 grains). Qualitative tests indicated the presence of sodium bicarbonate; a pink, acid-insoluble excipient was also present, resembling colored talc. The amount of sodium bicarbonate found was 87.1 per cent. Each tablet contains, therefore, approximately 0.6 Gm. (9 grains) of sodium bicarbonate (baking soda).


Complete Treatment
for $2.95
These Drawings Show You the Purpose of Cass Treatment!
Get Rid of This Sand-Like Grit That Causes Pain, Stiffness and Swelling!
MAIL TODAY and Watch the Quick Results!

Part of the advertising ballyhoo of Cassel's mail-order nostrums: *Pink tablets:* Baking soda; *Gray tablets:* Aspirin and cinchophen; *Special saline compound:* Epsom salt.

"*Special Saline Compound:* The label on the carton bore the following inscription:

SPECIAL SALINE COMPOUND

This PURE and HARMLESS compound possesses medicinal properties designed to aid the Tablets in Cass Laboratories Treatment to do the work Nature so often fails to do.

RID THE SYSTEM OF POISONOUS WASTES

Cass Laboratories Special Saline Compound is an excellent Regulator and Eliminant for children and old people, especially those who are feeble or in a weakened condition.

NO GRIPING NO NAUSEA

PRICE 50 CENTS

"The carton contained approximately 85 Gm. (3 ounces) of a white powder, having a slight aromatic odor. Qualitative tests indicated the presence of magnesium sulphate, a small amount of sodium and a trace of chloride. Phosphate,

citrate, tartrate, phenolphthalein and emodin-bearing drugs were not found. The product is essentially flavored magnesium sulphate (Epsom salt).

"Gray Tablets: The blue box also bore no descriptive name. The directions were: 'Take Two (2) Gray Tablets Before Each Meal And At Bedtime.'

"Each box contained ninety-nine grayish colored tablets; the average weight of each tablet was 0.35 Gm. (5 4/10 grains). Qualitative tests indicated the presence of calcium, carbonate, acetylsalicylic acid (aspirin), carbon (charcoal), cinchophen and an acid-insoluble residue. Arsenic, iodide, and emodin-bearing drugs were not found. Quantitative determinations yielded the following:

Acetylsalicylic acid	45.62 per cent
Cinchophen (phenylcinchoninic acid)	38.17 per cent
Charcoal (carbon)	8.32 per cent
Calcium carbonate (calculated from calcium [Ca^{++}] 0.41 per cent)	1.02 per cent
Acid insoluble ash	3.07 per cent
Moisture	0.24 per cent
Undetermined (by difference)	3.56 per cent
	100.00 per cent

"From the foregoing, it is concluded that the gray tablets contain essentially acetylsalicylic acid, charcoal and cinchophen, equivalent to 0.16 Gm. (2½ grains) of acetylsalcylic acid, 0.13 Gm. (2 grains) of cinchophen, and 0.3 Gm. (½ grain) of charcoal in each tablet.

"The suggested daily dose for the entire treatment consists of four pink tablets, eight gray tablets and, in addition, some of the saline laxative, equivalent to 1.28 Gm. (20 grains) of acetylsalicylic acid, 1.04 Gm. (16 grains) of cinchophen, 0.24 Gm. (4 grains) of charcoal, and 2.3 Gm. (36 grains) of sodium bicarbonate per day, plus a varying amount of Epsom salt."

From the chemists' report, it will be seen that this wonderful discovery, "developed under the direction of the Head Professor of Chemistry at one of the nation's largest Universities," and declared by "two of the foremost Medical Scientists in this country" to be superior to anything else in its line, is merely a combination of aspirin and cinchophen, with baking soda and Epsom salt.

When the overworked and undermanned department of the post office that protects the public against medical mail-order frauds can get around to this particular piece of quackery, the officials will doubtless be able to demonstrate to the courts that the "Cass Laboratories" are not laboratories, that "Harvey L. Cass," the alleged president, does not exist, that the combination of aspirin and cinchophen with baking soda and Epsom salt in the treatment of "rheumatism" is not the discovery of an alleged chemist associated with a mythical H. L. Cass, and that, in fact, the whole scheme constitutes a fraudulent use of the United States mails.

Correspondence

PHYSICIANS NEEDED BY AIR REGULATIONS DIVISION FOR EXAMINATION SERVICE

To the Editor:—The Air Commerce Act of 1926 provides for the control of civilian aeronautics by the Department of Commerce. All interstate flying, and to a certain extent intrastate flying, will be subject to the jurisdiction of this department. The regulations recently issued by the department provide for three types of pilot: the transport pilot will carry passengers, the industrial pilot will carry mail and freight, and engage in other industrial activities, and all others will be classed as private pilots. Provision has been made for the licensing of all three classes, and, as a prerequisite to license, a physical examination is necessary. This physical examination will be of three kinds, adapted to the class of flying to be indulged in by the three types of pilots.

The examination is somewhat technical, and therefore only those physicians who are certified as qualified by the Secretary of Commerce will be permitted to make these examinations. Eventually, it will be necessary to have at least one physician in every large town in the United States. For the present, it is desired to have qualified physicians in all places in which there is any activity in aviation. Steps will be taken by the Department of Commerce to give the necessary instruction to physicians who have not had training in "aviation medicine," so that they can make the required examination. Physicians will not be paid by the department, but will receive their fee from the pilots whom they examine. A certain number of physicians who have had special training in aviation medicine have been selected in a number of cities, but there is still great need for others. Every city or town in which there is any aviation activity should have an examiner.

Besides the men already selected, the department wishes to locate examiners in:

Montgomery, Ala.	Reno, Nev.
San Francisco	Buffalo
Sacramento, Calif.	New York
Boise, Idaho.	Bismarck, N. D.
Davenport, Iowa	Fargo, N. D.
Sioux City, Iowa	Muskogee, Okla.
Moline, Ill.	Cleveland
Wichita, Kan.	Cincinnati
New Orleans	Portland, Ore.
Boston	Pittsburgh
Grand Rapids, Mich.	Pierre, S. D.
Detroit	El Paso, Texas
St. Paul	Fort Worth, Texas
Butte, Mont.	Cheyenne, Wyo.
	Milwaukee

All physicians who are interested should request further information from the Medical Director, Air Regulations Division, Department of Commerce, Washington, D. C. They should give their name, residence, age, school, and year of graduation, and the nature of their practice. It will not be necessary for physicians to leave their homes in order to receive the necessary instruction, according to present plans.

Physicians located at places other than those listed above may likewise apply, particularly if there is any aviation activity in that vicinity.

L. H. BAUER, Washington, D. C.
Medical Director, Air Regulations Division.

"TWELVE WEEKS TO HEALTH"—A DENIAL

To the Editor:—In a recent circular to certain members of the medical profession distributed through Funk and Wagnalls Company, our names were used as endorsing a course entitled "Twelve Weeks to Health" by one Arthur A. McGovern of New York.

We wish to state that in this circumstance our names were used without our knowledge or consent.

HENRY G. BUGBEE, M.D.
HENRY C. FLEMING, M.D.
HARLOW BROOKS, M.D.
FRANCIS W. SHINE, M.D.
TRUMAN LAURANCE SAUNDERS, M.D.
EDWARD CUSSLER, M.D.

New York.

NOUNS AS ADJECTIVES

To the Editor:—Your articles "The Art and Practice of Medical Writing" were instructive and entertaining. In them I did not see any reference to the growing tendency to use nouns as adjectives. Dr. W. W. Keen called this usage to our attention several years ago. He strongly deprecated it.

"Heart stimulant, lung surgery, stomach disease" and others seem to be with us to stay. In one of our foremost surgical journals I recently read of the "vessel lumen" being smaller. I have never seen "femur fracture" in print, but I am awaiting its appearance with confidence.

MALCOM THOMPSON, M.D., Greenville, N. C.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INDUCTION OF PREMATURE LABOR FOR CONTRACTED PELVIS

To the Editor:—In THE JOURNAL, November 13, your reply to M.D., New Jersey, regarding the induction of premature labor for contracted pelvis by means of quinine and pituitary preparations contains a number of statements which, I feel, should not go unchallenged.

The induction of labor prematurely to enhance the chances of vaginal delivery is still a means considerably employed by obstetricians and is preferable to cesarean section when the former offers, in the judgment of the obstetrician, a probably successful issue. The reasons advanced by you are erroneous: The majority of women with contracted pelvis do not "deliver live babies without much trouble," unless the babies are small or premature. Your statement that those who "fail to deliver spontaneously can have a cesarean section, performed early in labor, without much risk," is fallacious, because how can one determine early in labor that the patient cannot deliver spontaneously? By spontaneously I take it to mean without interference. Do you mean to imply that cesarean section is preferable to a forceps delivery? And what do you mean by "without much risk"? Is a mortality of from 3 to 10 per cent much or little risk? I cannot agree with your third reason that premature labor induction has a definite maternal and fetal mortality. The maternal mortality depends mainly on the method of induction employed, while the fetal mortality will depend on the character of labor following the induction, and therefore also on the method of induction chosen. Pituitary preparations and quinine have no place as a method of inducing labor. In this we agree, although you are not sufficiently emphatic in your condemnation of this procedure as not only dangerous to both mother and child, but also without any value as promoters of labor. You advocate rupture of the bag of waters, apparently as a method of choice. This method is found in many textbooks, but how often can this be accomplished four weeks before term, with the cervix almost closed and the bag not bulging? Your advocacy of packing the cervix also has its dangers. The only time I employed this method it was followed by a chill and a rise in temperature to 103, the latter subsiding after removal of the gauze.

Lastly, you advise the colpeurynter. While it is true that the bags at present available do not offer an ideal instrument in that they are often slow and fail to cause physiologic dilatation and obliteration of the cervix uteri, it must be granted that these and the bougie are still the best agents for the induction of labor because they are comparatively harmless and they nearly always succeed in bringing on labor "pains." Either or both can always be inserted into the uterus, irrespective of the condition of the cervix. The bag can remain in the uterus as long as forty-eight hours, and the maintenance of an intact amniotic sac is often an advantage.

MARK HORNSTEIN, M.D., New York.

COMMENT.—DeLee, in the fourth edition of his book, p. 750, says:

> In the absolutely contracted pelvis no difficulty is met in deciding on treatment. A full-sized child cannot be delivered through it, and for this reason cesarean section is indicated whether or not the child is living, . . . In the relatively contracted pelvis, decision also is not difficult. Induction of premature labor is not recommended because of its very high fetal mortality.

In these cases, DeLee says that cesarean section is usually necessary to deliver a live baby and the cervical operation is the one to be done when the conditions for the classic operation are not as they should be. Of the moderately contracted pelvis, DeLee says:

> Primarily it must be stated that a large number — perhaps 75 per cent—of labors in such pelves terminate spontaneously at or near term; second, that cesarean section performed, as it can be when the need for it is known as far beforehand, has a very low mortality — less than 2 per cent; third, that should the event prove that labor will not terminate spontaneously, in pubiotomy and extraperitoneal cesarean section we have operations that will save the child and not seriously endanger the mother; fourth, that should all our plans fail, craniotomy could be performed as a last resort after the test of labor has been faithfully tried, and we would not lose a larger number of babies than with induced labor.
>
> On the other hand, the operation of induced labor is not absolutely safe. Statistics give the maternal mortality as from 1 to 2 per cent, but nowadays, in the hands of a capable accoucheur, there should be no mortality. From 20 to 30 per cent of the children are lost in labor, and another portion dies within a few weeks in spite of the incubator, good nursing, etc. Then, too, the uterus is sometimes very sluggish and torpid, requiring much stimulation, instrumentation, frequent examinations, etc., lasting from several days to even a week . . . All these conditions have been observed by the author and have much reduced his enthusiasm for the induction of premature labor in contracted pelves, and he very rarely performs it.

Williams, in the fourth edition of his book, p. 404, says:

> It is now generally recognized that from 70 to 80 per cent of all labors complicated by contracted pelves, including the cases of pronounced deformity which require radical interference, will end spontaneously if treated expectantly. With this fact in mind, Pinard, Bar, Krönig, myself and others hold that the induction of premature labor is no longer justified, and that in cases of most pelvic contractions equally good results for the mother and far better results for the child will be obtained by abstaining from the former operation and subjecting the patient to a test of the second stage of labor, resorting to cesarean section or pubiotomy should nature prove herself insufficient.

Recently Williams (*Am. J. Obst. & Gynec.* **11**:735 [June] 1926) reported that in a series of 2,275 labors complicated by contracted pelves, only 221 cesarean sections (9.7 per cent) were performed. Among these 221 operations, there was only one maternal death (0.45 per cent). DeLee reported 330 cervical cesarean sections with only two deaths (0.61 per cent); hence cesarean section does not necessarily have a maternal mortality of from 3 to 10 per cent.

If there is insufficient cervical dilatation to permit rupture of the membranes, it is difficult to conceive how a colpeurynter can be inserted through such a cervix.

MANIC-DEPRESSIVE INSANITY AND NEURASTHENIA

To the Editor:—Granting that manic-depressive insanity may occur without the maniacal stage and without delusions, hallucinations or more serious impairment of judgment than is observable among the mass of mankind, as it is said by Sir John Batty Tuke, John Macpherson and Lewis Campbell Bruce to do, and granting further that it does not end in dementia, as it seldom if ever does, by what symptoms can it be distinguished from neurasthenia, in which there is practically always a tendency to the same mental depression, fears and anxieties that are found in manic-depressive insanity? What are exactly the essential symptoms of manic-depressive insanity in the absence of which a diagnosis of that condition is not justified? Is manic-depressive insanity, as described above, a distinct mental disease in the patient or a distinct verbal habit in the diagnostician? Please omit my name.

M.D., Colorado.

ANSWER.—The manic-depressive psychoses are oscillations of mood of pathologic degree and duration. They are apparently exaggerations of the swings of mood we all experience to a greater or less degree and are said to be pathologic because they interfere with ability to deal adequately with the affairs of life. This means that they do entail serious impairments of judgment, which may result, for example, in suicide or the wrecking of reputation or business. It is important that the meaning of the title be understood. The oscillation of mood may be in the direction either of depression—which corresponds in part with the melancholias of older classifications—or of happy excitement—which in older groupings would have been called acute mania. It does not mean that both these so-called phases occur in the same patient, though sometimes, as in what are spoken of as circular types, these two phases do follow each other. The two directions of oscillation are included together under one nosological title—manic-depressive—because they are both swings of mood, though in opposite directions.

While hallucinations are uncommon, delusions certainly are not, if this term is properly understood. The depressed patient has false beliefs of personal unworthiness, inefficiency, hopelessness, loss of ability to be interested in or to love others, etc. The manic patient believes himself unusually capable and efficient, regardless of the truth. The differentiation of psychotic from psychoneurotic depression (often called neurasthenia) is not always simple and yet is of the greatest practical importance, if only for the reason that the danger of suicide is great in the former and negligible in the latter. The foundation of the distinction lies in the fact that the patient with a depressive psychosis believes that his self or ego is changed and he usually blames himself for the change. The psychoneurotic person, on the other hand, while he often expresses hypochondriac thoughts and fears, still does not regard himself as changed and he usually attributes the cause to agencies outside himself; he is the unfortunate victim of circumstances beyond his control and uses the sickness as a means of avoiding some intolerable situation or of securing some desired consideration. The greatest difficulty necessarily arises in the slighter degrees of disturbance; every gradation between what may be described as normal depression and the pathologic degrees is observed. Diagnosis is of great importance in prescribing treatment; failure to recognize the early stages of a depressive psychosis may lead to the adoption of measures that may greatly aggravate and prolong the attack. The psychotic condition demands rest and freedom from stimulation such as is secured

by appropriate hospitalization; the psychoneurosis will often be rendered more intractable by such means. The particular title used to designate the form of mental disease may be a verbal habit of the diagnostician, but the physician who fails to recognize the psychotic depressions, regardless of what name he calls them, is failing in his duty to his patients.

FACSIMILES AND REPRINTS OF CLASSIC MEDICAL ARTICLES

To the Editor:—I would greatly appreciate it if you could furnish me with a list of reprints of old important classic medical articles published in the press which are available in facsimile editions or in reprints.

NEWTON EVANS, M.D., Loma Linda, Calif.

ANSWER.—Following is a list of facsimile reproductions, to which are subjoined condensed lists of separate (bound) reprints. THE JOURNAL will be glad to learn of any items omitted from this list:

Harvey, William: An anatomical dissertation upon the movement of the heart and blood in animals, being a statement of the discovery of the circulation of the blood. Privately reproduced in facsimile from the original edition printed at Frankfort-on-the-Main in the year 1653, with a translation and memoir. X, 72 pp., Il.: VIII, 9-91 pp. sm. 4°. Cambridge, E. Morton, 1894.

Vicary, Thomas: The anatomie of the bodie of man. The edition of 1548, as reissued by the surgeons of St. Bartholomew's in 1577. With a life of Vicary, notes on surgeons in England, Bartholomew's Hospital, and London, in Tudor times, an appendix of documents, and illustrations, edited by Fredk. J. Furnivall and Percy Furnivall. Pt. I. vii, 336, 18 pp., 5 pl., Port., 8°. London, N. Truebner & Co., 1888.

Smith, David Eugene: Rara Arithmetica; a catalogue of the arithmetics written before the year MDCI. Boston and London, Ginn & Co., 1908. (Title pages.) Many of these arithmetics were written by physicians.

[Knutsson, Bengt] Bishop of Vesterds [flor. 1461]: A litil boke the whiche traytied and reherced many gode thinges necessaries for the . . . pestilence . . . made by the . . . Bishop of Arusiens . . . [London, 1485?] Reproduced in facsimile from the copy in the John Rylands Library. With an introduction by Guthrie Vine, M. A. xxxvi, 1 l., facsim., 9 ll. 4°. Manchester, The University Press, 1910. Added title page: The John Rylands facsimiles, No. 3. Original printed by Willelmas de Machlinia.

Gouernayle (The) of helthe: with the medecyne of ye stomacke. Reprinted [facsimile] from Caxton's edition (circa mcccxxci). With introductory remarks and notes by William Blades. viii, 100 pp. 8°. London, Blades, East and Blades, 1858.

Galen, Claudius: De temperamentis, et de inaequali intemperie libri tres, Thoma Linacro Anglo interprete. Impressum apud praeclaram Cantabrigiam per Joannem Siberch, anno mdxxi. Reproduced in exact facsimile, with an introduction. By Joseph Frank Payne, and a portrait of Thomas Linacre. 48 pp. 78 l. 12°. Cambridge, C. J. Clay, 1881.

Klebs, A. C., and Sudhoff, K.: Die ersten gedruckten Pestschriften, mit Abbildungen im Text, 24 Tafeln und Faksimile von Steinhowel's Berchlein der Pestilentia Ulm, 1473. München, 1924.

De Ketham (Johannes) Alemannus. Der Fasciculus medicinae des Johannes de Ketham, Alemannus. Facsimile des Venetian et Erstdruckes von 1491 mit einer historischen Einfuhrung, hrsg. von Karl Sudhoff. 18 unnum. pp. 37-57 pp., 13 pl. fol. Mailand. R. Lieb & Co., 1923.

Ruhräh, John: Pediatrics of the past; an anthology compiled and edited by John Ruhräh, with a foreword by Fielding H. Garrison, M.D., xxv; 592 pp. illus. (incl. facsim.) plates, ports. 8°. New York, P. B. Hoeber, Inc., 1925. Contains facsimile reproductions of pages.

Fasciculo di Medicina, Venice, 1492. With an introduction, a complete English Translation of the Anatomy of Mundinus, the earliest text in the volume, and much explanatory matter including an Atlas of 36 plates and 90 figures and a thesis on anatomical practice and anatomical Knowledge in Mediaeval and Renaissance Times. By Charles Singer. 2 parts bound as separate volume in Folio, Part 1: 185 pp. of which 36 are plates. Part II: 104 pages Facsimile. Florence, R. Lier & Co., 1925.

The Earliest Printed Literature on Syphilis (from the years 1495-1498) Reproduced in facsimile with an introduction by Karl Sudhoff. Adapted for English Readers by Charles Singer, R. Lier & Co., Florence.

Sudhoff, K.: Walahfrid von der Reichenau Hortulus, Gedichte über die Kräuter seines Klostergartens vom Jahre 827. Verlag der Münchner Drucke, München, 1926.

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TREATMENT OF ALVEOLAR PROCESS FOLLOWING EXTRACTION OF TEETH

To the Editor:—I should appreciate some word from you as to the desirability or not of curetting the alveolar processes and suturing the gums thereafter following the extraction of teeth. My impression is that this procedure is not sanctioned by the leaders in the dental profession and I am quite sure that it is not in the medical profession by men qualified to pass on it. My understanding of the objection to such practice is that it opens up vascular areas with greater dissemination of infection than is the case with simple extraction. I should greatly appreciate the opinion of your department in this matter. Please omit name.

M.D., Illinois.

ANSWER.—There are serious objections to curetting the sockets and suturing the gums following extraction of chronically infected teeth. The so-called granuloma at the apex of a pulpless tooth is not a pathologic growth but normal granulation tissue built up preparatory to the restoration of bone destroyed by the preceding acute process. On removal of an infected tooth, the granulation tissue already formed completes its normal function by replacing the osseous tissue destroyed, which previously it had been unable to do on account of the presence of the infected apex of the tooth. A surgeon would not consider for a moment the closure of an infected wound. Curettement and closing the wound following extraction of an infected tooth is equally unscientific, since it tends to disseminate infection. Serious results have been known to follow such unwise procedures.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. DeVighne, Juneau.

CALIFORNIA: Los Angeles, Jan. 31 to Feb. 3. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: State Board of Healing Arts (prerequisite to examination), Feb. 12. Sec., Dr. Charles M. Bakewell, Box 1895, Yale Station, New Haven.

KANSAS: Topeka, Feb. 8. Sec., Dr. Albert S. Ross, Sabetha.

NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 24-27. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Albany.

PENNSYLVANIA: Philadelphia, Jan. 25-29. Mr. C. D. Koch, Director, Professional Education Bureau, Harrisburg.

PORTO RICO: San Juan, March 1. Sec., Dr. D. Biascoechea, 3 Allen Street, Box 804, San Juan.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 8-10. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Cheyenne, Feb. 7-8. Sec., Dr. G. M. Anderson, Cheyenne.

NEW EXAMINATION METHODS AT STANFORD UNIVERSITY

At the Stanford University School of Medicine, San Francisco, departmental examinations are to be substituted for individual course examinations. Each departmental head is to be required to make arrangements for the keeping of records of the attendance of students at the individual courses in his department, and of such records of the progress of students in the individual courses as may seem desirable. These records are to be kept on file in the office of each departmental head, and from them reports on the attendance of the students in the individual courses will be made to the dean's office whenever desired.

If a student wishes to transfer to another medical school, he will be entitled to an examination in any required course completed that has not been covered by a departmental examination.

The character and scope of the departmental examination are to be determined by the departmental faculties. In arriving at the final grade in departmental examinations, the character of the work of the student in individual courses may be taken into account.

Under the new rule of the faculty, formal examinations will be held as follows:

At the end of the second year: medicine, introductory; surgery, introductory; obstetrics and gynecology, introductory.

At the end of the eighth quarter: public health and preventive medicine; pharmacology.

At the end of the third year: pathology; internal medicine; surgery; gynecology.

At the end of the tenth quarter: obstetrics.

At the end of the fourth year: medicine and medical specialties, including pediatrics, neuropsychiatry, dermatology, radiology and physiotherapy; surgery and surgical specialties, including orthopedic surgery, genito-urinary surgery, otorhinolaryngology and ophthalmology.

The medical faculty directs that examinations at the end of the fourth year be of a very general nature and cover all aspects of a given problem presented.

Nothing in the regulations is to be construed as preventing any instructor from giving such tests in regard to the progress of the students in his courses as he may think necessary. These tests, however, must be arranged for during the regular hours of the course.

California October Examination

Dr. Charles B. Pinkham, secretary of the California Board of Medical Examiners, reports the written examination held at Sacramento, Oct. 19, 1926. The examination covered 9 subjects and included 108 questions. An average of 75 per cent was required to pass. Of the 38 candidates examined, 28 passed and 10 failed. Fifty-eight candidates were licensed by reciprocity since July, 1926. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
University of California Medical School	(1926) 78,	78.7
Rush Medical College	(1923) 77, (1924) 89, (1925)	86.8
University of Illinois College of Medicine	(1926) 75.9, 76.2, 83.6,	87
Tulane University of Louisiana School of Medicine	(1926)	80.2
Johns Hopkins University Medical Department	(1925)	87.9
Harvard University	(1926)	86.7
University of Michigan Medical School	(1925) 77.4, 84.2,	87.6
Washington University School of Medicine	(1925)	79.1
University of Nebraska College of Med.	(1917) 81.1, (1926)	79.8
Eclectic Medical College, Cincinnati	(1926)	77.9
University of Oregon Medical School	(1926)	81.6
Jefferson Medical College of Philadelphia	(1926)	84.6
Baylor University College of Medicine	(1926)	81.8
Marquette University School of Medicine	(1926)*	86.3
Western University Faculty of Medicine	(1909)	82.3
McGill University Faculty of Medicine	(1903) (1918) 91.9, (1923) 81.9	83,
University of Berlin, Germany	(1913)	78.1

College FAILED	Year Grad.	Per Cent
College of Medical Evangelists	(1925)	73
Loyola University School of Medicine	(1925)	64.2
Northwestern University Medical School	(1926)	74.2
Rush Medical College	(1926)	78†
University of Michigan Homeopathic Medical School	(1904)	72.8
Marquette University School of Medicine	(1926)*	74
National University of Athens, Greece	(1923)	67.4
University of Budapest, Hungary	(1922)‡	74.6
University of Lisbon, Portugal	(1923)	69
Imperial University of St. Petersburg	(1902)‡	55

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine	(1917)	Texas
Atlanta Medical College	(1915)	Mississippi
American Medical Missionary College	(1904)	Wisconsin
Chicago College of Medicine and Surgery	(1911)	Illinois
College of Physicians and Surgeons, Chicago	(1901) (1906) Texas	Illinois
Hahnemann Medical College and Hospital, Chicago	(1881) (1909) South Dakota	Colorado
Loyola University School of Medicine	(1918)	Illinois
Northwestern University Medical School	(1909)	N. Dakota
Rush Medical College	(1902) Illinois, Minnesota, (1903) (1904), (1917), (1925) Illinois	Iowa
University of Illinois College of Medicine	(1917)	Illinois
Indiana University School of Medicine	(1910), (1913)	Indiana
Drake University College of Medicine, Des Moines	(1905), (1906), (1910)	Iowa
Keokuk Medical College, College of Phys. and Surgs.	(1906)	Iowa
State University of Iowa College of Medicine	(1919)	Iowa
Bowdoin Medical School, Brunswick	(1908)	Maine
Atlantic Medical College, Baltimore	(1909)	Maryland
Harvard Medical School	(1919)	Mass.
University of Minnesota Medical School	(1904), (1908)	Minnesota
Marion-Sims College of Medicine	(1898)	Illinois
Missouri Medical College, St. Louis	(1891)	Missouri
St. Louis University School of Medicine	(1905) (1925, 2) Missouri	Illinois
Washington University School of Medicine	(1893) (1911) Missouri	Kansas
Creighton University College of Medicine	(1924)	Nebraska
Nebraska College of Medicine	(1907)	Nebraska
Albany Medical College	(1914)	Oregon
Columbia University College of Phys. and Surgs.	(1908)	Illinois
Cornell University Medical College	(1924)	New York
Long Island College Hospital	(1925)	Nebraska
Medical Dept. of the Univ. of the City of New York	(1891)	Illinois
Eclectic Medical College, Cincinnati	(1899)	Michigan
Ohio State University College of Medicine	(1925)	Ohio
University of Oregon Medical School, Portland	(1919)	Oregon
Hahnemann Med. College and Hosp. of Philadelphia	(1916)	Penna.
Jefferson Medical College of Philadelphia	(1913)	Penna.
Meharry Medical College	(1910), (1915)	Texas
Memphis Hospital Medical College	(1911)	Arkansas
Baylor University College of Medicine, Dallas	(1914)	Texas
University of Texas Department of Medicine	(1923)	Texas
Medical College of Virginia	(1886)	Idaho
Milwaukee Medical College, Milwaukee	(1897)	Wisconsin
German University of Prague, Czechoslovakia	(1921)‡	Montana
University of Giessen, Germany	(1922)	Maryland
National School of Medicine, Mexico	(1888)‡	Texas

* This candidate has completed his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.
† Fell below 60 per cent in two subjects.
‡ Verification of graduation in process.

Illinois October Examination

Mr. V. C. Michels, superintendent of registration of the Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, Oct. 5-7, 1926. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 73 candidates examined, 53 passed and 20 failed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
College of Medical Evangelists	(1925)	88
American Medical Missionary College, Chicago	(1903)	81
Chicago Medical School	(1926) 75, 76, 80,	81, 84
Loyola University School of Medicine	(1926) 80, 80, 81, 85, 85, 87	80,

Northwestern University Medical School	(1924) 84, (1925) 82, (1926) 77, 81, 81, 82, 83, 84, 84, 85
Rush Medical College	(1925) 83, (1926) 80, 80, 80, 81, 81, 81, 82, 82, 83, 84, 85, 85, 86, 89, 90
University of Illinois College of Medicine	(1926) 78, 80, 85, 85, 86, 87, 88
State University of Iowa College of Medicine	(1925) 80
University of Louisville School of Medicine	(1901) 75
Washington University School of Medicine	(1925) 86
University of Pennsylvania School of Medicine	(1925) 80
University of Manitoba Faculty of Medicine	(1917) 83

College	FAILED Year Grad.	Per Cent
George Washington University Medical School	(1924)	84*
Chicago College of Medicine and Surgery	(1916)	69
Chicago Medical School	(1925) 71, (1926)	69, 77*
Loyola University School of Medicine	(1916) 70, (1926)	76*
Northwestern University Medical School	(1913) 67, (1926)	79*
Rush Medical College	(1926)	81,* 82*
University of Illinois College of Medicine	(1926)	83*
Harvard University	(1923)	84*
University of Oklahoma School of Medicine	(1925)	77*
Meharry Medical College	(1892) 75,* (1924)	73
University of Greifswald, Germany	(1921)	67
University of Leipzig, Germany	(1921)	72
National University of Athens, Greece	(1922)†	45
University of Naples, Italy	(1920)†	71

* Failed in clinical examination only.
† Verification of graduation in process.

Medical Economics

THE PHYSICIAN'S INCOME TAX—1927

The taxpayer who is required to make a return must do so on or before March 15, unless an extension of time for filing the return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must contain a full recital of the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on individual citizens or residents of the United States, under the Revenue Act of 1926, is 1.5 per cent on the first $4,000 of net income in excess of the exemptions and credits, 3 per cent on the next $4,000, and 5 per cent on the remainder.

The following discussion covers matters relating specifically to the physician. Full information concerning questions of general interest may be obtained from the official return blank or from the collectors of internal revenue.

WHO MUST FILE RETURNS

1. Returns must be filed by every person having a *gross* income of $5,000 or more, regardless of the amount of his net income or his marital status. If the aggregate gross income of husband and wife, living together, was $5,000 or more, they must file a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

2. If *gross* income was less than $5,000, returns must be filed (*a*) by every unmarried person, and by every person married but not living with husband or wife, whose *net* income was $1,500 or more, and (*b*) by every married person, living with husband or wife, whose *net* income was $3,500 or more. If the aggregate net income of husband and wife, living together, was $3,500 or more, each may make a return or both unite in a joint return.

If the marital status of a taxpayer changed during the tax year, the amount of income necessary to bring him within the class required to make returns should be ascertained by inquiry of the local collector of internal revenue.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain one from the local collector of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year from professional work, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation, and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year, as stated above. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In view of the credit of 25 per cent allowed on *earned* net income, the physician should state accurately the amount of such income as distinguished from his receipts from other sources. *Earned* income means professional fees, salaries and wages received as compensation for personal services rendered. From this, in the computation of the tax, must be subtracted certain "earned income deductions." The difference is the "earned net income."

The first $5,000 of an individual's net income from all sources may be claimed, without proof, to be *earned* net income, whether it was or was not in fact *earned* within the meaning set forth in the preceding paragraph. Net income in excess of $5,000 may be claimed as *earned* if it in fact comes within that category. However, a taxpayer may not claim, as *earned*, net income in excess of $20,000.

The conditions relating to the computation of the tax on earned income are too elaborate to be stated here. In case of doubt, physicians should consult collectors of internal revenue.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate

or become obsolete, but it is not in the ordinary sense of the word "consumed in the using"; rather, it wears out.

Payments for equipment or nonexpendable property for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value, and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for equipment or nonexpendable articles cannot be deducted, yet from year to year there may be charged off against them reasonable amounts as depreciation. The amounts so charged off should be sufficient only to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, claim should not be made for depreciation.

A hard and fast rule cannot be laid down as to the amount deductible each year as depreciation. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent a year has been suggested as a fair amount for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The proper allowance for depreciation of any property is that amount which should be set aside for the tax year in accordance with a reasonably consistent plan, not necessarily at a uniform rate, whereby the aggregate of the amounts so set aside, plus the salvage value, will at the end of the useful life of the property in the business equal the purchase price of the property or, if purchased before March, 1913, its estimated value as of that date or its original cost, whichever may be the greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Physicians who, from year to year, claim deductions for depreciation on nonexpendable property will do well to make annual inventories, as of January 1, each year.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses necessary for professional visits to patients are deductible. The Commissioner of Internal Revenue, however, still holds that traveling expenses incident to attendance at meetings of medical societies are merely personal expenses and therefore not deductible. Physicians who have expended money for traveling expenses to attend meetings of medical societies shot not make a deduction for the amount so expended, in computing their income taxes under current schedules. They are advised, however, either to make a memorandum on their income tax returns or to file a memorandum with them, showing in detail the amount so expended. Such a memorandum should show that payment of the tax on that amount has been demanded by the Commissioner of Internal Revenue and is made solely by reason of that demand, under protest and under duress. The physician filing such a memorandum should retain a copy of it. In event of any reversal of the commissioner's ruling, physicians who have made such records can more easily substantiate their claims for repayment. A physician who deducts traveling expenses or the expenses of postgraduate study must expect to have such deduction disallowed. He will then be compelled to pay the tax on the disallowance, with interest, or to appeal to the Board of Tax Appeals and possibly to the courts. If he appeals, he will in the end have to abide by the result.

AUTOMOBILES

Payment for an automobile is a payment for permanent equipment, and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, etc.

Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire, etc.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expenses incurred in the defense of a suit for malpractice are deductible as business expense. Expenses incurred in the defense of a criminal action, however, are not deductible.

Sale of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

Book Notices

APPLIED BIOCHEMISTRY. By Withrow Morse, Professor of Physiological Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Cloth. Price, $7. Pp. 958, with 256 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This is the most recent addition to the field of biologic chemistry. The object of the author, in common with many others, is to have something new. This book has "been written with a view of weaving the woof of biochemistry into the warp of medicine." It is this idea which explains the use of the term "applied." In striking difference to similar textbooks are the excellent lithographs of contemporary men working in physiologic chemistry and related fields. The first eight chapters deal with descriptive chemistry, which is, as a whole, fairly well presented by the aid of diagrams and illustrations; but the lack of careful and accurate editing is conspicuous. There are uncritical statements, errors in chemistry, and even evidence at times of a lack of proper appreciation of the subject. In the first chapter, "Man and His Environment," is discussed the relationship that exists between the human organism and the various physical and chemical laws of nature. The second chapter, on the promotion of chemical action, relates to the developments of the action of enzymes, but parts of these sections are carelessly written and are confusing unless the student has a good chemical training. The subject matter of the remaining chapters, the digestion and utilization of foods, nutrition, metabolism and their principal analytic methods, is well selected, but, as has been pointed out in another review, much of the material is too much up to date. That is, it is suitable for mature students and deals with the experimental "battle lines" of biochemistry which have not become well established. This is of value to those whose background affords mature judgment, but in a college textbook sacrifices too much of the fundamentals. As far as the medical "applications" are concerned, the book is not strikingly different from others. There is room for much revision; a second edition thus revised would be a valuable asset to a bookshelf of biochemical treatises.

ANATOMISCHE GRUNDLAGEN WICHTIGER KRANKHEITEN. Ein Lehrbuch für Ärzte und Studierende. Von Dr. Leonhard Jores, o. ö. Professor der allgem. Pathologie und patholog. Anatomie an der Universität Kiel. Second edition. Paper. Price, 48 marks. Pp. 525, with 365 illustrations. Berlin: Julius Springer, 1926.

This edition is about twice the size of the first, which was published when Jores was at Cologne and was exhausted some years ago. The original plan of the work has been retained. It is essentially a work in "general pathology," written to assist in preparation for licensure examinations and also to sustain the interest of practicing physicians in pathology. Important diseases are considered in chapters with the usual captions of general pathology. For example, when hemorrhage as one of the disturbances of circulation is reviewed, there are accounts of menorrhagia, spontaneous rupture of the aorta, apoplexy and other diseases in which hemorrhage is the main process. The theoretical and abstract discussions of disease are replaced by accounts of the morphologic changes of the diseased human body, and not only the important lesions but also their sequences are presented as they are found and explained at postmortem examinations. This work should be cordially welcomed here by those especially interested or taking part in hospital conferences between pathologists and clinicians.

L'ENFANT ISSU DE PARENTS TUBERCULEUX. Étude critique de l'hérédité tuberculeuse. Par le Docteur Marcel Lelong. Paper. Pp. 232. Laon: Imprimerie de L'Aisne, 1925.

This is essentially a study of the fate of the child of tuberculous parents; also an elaborate criticism of a renaissance of the theory of the intra-uterine infection of the embryo with the tubercle bacillus. Lelong deals thoroughly and fairly with the proponents of infection of ovule and spermatozoon. Tuberculosis of the placenta is accepted as happening on rare occasions, but is characterized as being most unusual. The actual discovery of tubercle bacilli in the placental tissue is cited but not confirmed by careful sectioning or by guinea-pig inoculation. The case of tuberculosis of the placenta, he states, can never be shown macroscopically or microscopically, except in rare instances. Lelong agrees that antibodies originating in the maternal system may be passed to the fetal system, but disappear from the infantile system in a few weeks. The author's studies of cadavers of children born of tuberculous mothers fail to show evidence of tuberculosis, suspected by the proponents of the heredity idea. Children of the tuberculous are shown not to be any more susceptible to infectious diseases than are those born of nontuberculous mothers. Lelong has made a study of children separated from their mothers who were suffering from open tuberculosis, either at birth or soon after, and cared for in crèches or in the homes of foster parents for a term of four years. He noted a death rate of 12 per cent (Forssner, Stockholm) and 38 per cent (Bernard and others, Paris). Many of these deaths had been called "inexplicable," but Lelong thinks that the privations and cold care to which these little ones are usually subjected will account for them. While the conclusions of the author may not be accepted by all, his sincerity and thoroughness cannot be impugned.

PRACTICAL DIETETICS FOR ADULTS AND CHILDREN IN HEALTH AND DISEASE. By Sanford Blum, A.B., M.S., M.D., Head of Department of Pediatrics, San Francisco Polyclinic and Post Graduate School. Second edition. Cloth. Price, $4 net. Pp. 362. Philadelphia: F. A. Davis Company, 1926.

In the introduction to this book the author says "It is impossible to prescribe correct dietaries based exclusively on a classification of diseases. The diet should be individualized for each particular case: to be successful it must be adapted to the patient as well as to the disease." This statement will be accepted as a fact by most physicians: yet in this book are diets for all kinds of diseases, rather arbitrarily assembled. Such diet lists certainly have a function in furnishing a basis for dietary guidance, but can never be used as an absolute index of what to eat or what to avoid. Little is absolutely proved in dietetic therapy; in a question such as the controversy about roughage in mucous colitis, it would seem more scientific to present both sides of the question rather than to dismiss one side as "illogical" on an argument ("the already injured intestinal mucosa") not founded on scientific data. Who knows what puts the mucus in mucous colitis? In typhoid, the diet list looks antiquated, to say the least; attention is not paid to the advances of the last two decades. The lists furnished for duodenal or gastric ulcer are strangely single-purposed for a subject in which even the fundamental principles of feeding are subject to debate. In other words, the printed page gives too much evidence of diets for disease, and too little of the principles of scientific dietetic therapy on which may be constructed sound lists subject to much individual variation.

DIAGNOSTISCHE UND THERAPEUTISCHE IRRTÜMER UND DEREN VERHÜTUNG-CHIRURGIE. Herausgegeben von Prof. Dr. J. Schwalbe, Geh. San.-Rat in Berlin. Achtes Heft. Peritoneum. Von Prof. Dr. O. Kleinschmidt, Oberarzt an der chirurgischen Universitätsklinik zu Leipzig. Appendizitis. Von Geh. Med.-Rat Prof. Dr. E. Payr, Direktor der chirurgischen Universitätsklinik zu Leipzig. Äussere Hernien. Von Prof. Dr. J. Hohlbaum, Oberarzt an der chirurgischen Universitätsklinik zu Leipzig. Paper. Price, 16.50 marks. Pp. 261, with 36 illustrations. Leipsic: Georg Thieme, 1926.

This is a small, thoroughly practical book, the perusal of or occasional reference to which is to be recommended, not only to the surgeon but to the internist and the general practitioner as well. In it, as in the other volumes of this series, the various authors, each of whom is an experienced medical teacher, bring out the points needed to avoid errors and to be successful in the recognition and management of disease. The book is free from material introductory, redundant or irrelevant to the practicing physician. It includes a discussion of peritoneal disease, appendicitis and external hernias, each by a different author, and well maintains the standard set by the previous numbers of the series.

GUÉRIR EST BIEN—PRÉVENIR EST MIEUX. L'effort réalisé en hygiène et en médecine sociales dans le département de Meurthe-et-Moselle. Par Louis Spillmann, Doyen de la Faculté de médecine de Nancy, et Jacques Parisot, Professeur agrégé chargé de la Clinique des maladies tuberculeuses. Paper. Pp. 293, with 93 illustrations. Nancy: Berger-Levrault, 1925.

This is an interesting and instructive account of the work in preventive medicine that has been carried on in the department of Meurthe-et-Moselle in France since the close of the war. The campaigns being waged against tuberculosis, venereal disease and cancer are recorded, and the infant welfare work is described. The volume is attractively and fully illustrated, and contains a large amount of valuable statistical material, not only of death rates from the various diseases but also in connection with the examination and treatment of patients in clinics and hospitals.

THE CARRIER PROBLEM. By K. C. Paul, M.B.B.S. With Foreword by David Nabarro, M.D., F.R.C.P., Director of the Research and Pathological Laboratories, The Hospital for Sick Children. Cloth. Price, $1.75. Pp. 102. New York: Oxford University Press, 1926.

This little book does not contain the results of any new observations or thought on the carrier problem. It simply gives in condensed form a trustworthy summary of the established knowledge on the subject, and it is intended especially to be an aid to the student of medicine.

DER HEUTIGE STAND DER CHEMOTHERAPEUTISCHEN CARCINOMFORSCHUNG. Von Dr. med. N. Waterman, Biologe am Laboratorium Antoni van Leeuwenhoekhuis (Niederl. Institut für Krebsforschung) Amsterdam. Paper. Price, 6.60 marks. Pp. 74, with 37 illustrations. Berlin: Julius Springer, 1926.

A critical review which leaves the author, if not the reader, with the conviction that the slight results so far obtained warrant the hope that the future will yield therapeutic success in cancer therapy.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

HANDBUCH DER INNEREN SEKRETION: Eine umfassende Darstellung der II. chirurgischen Klinik in Wien, und Geh. Med.-Rat Prof. Dr. E. Payr, Direktor der chirurgischen Universitäts-Klinik in Leipzig. Band I. 1. Hälfte. Chirurgie des Kopfes, des Halses, der Brust, der Wirbelsäule, des Rückenmarkes und des Beckens. Band I. 2 Hälfte. Chirurgie der Brust, der Wirbelsäule, des Rückenmarkes und des Beckens. Second edition. Paper. Price, 36 marks. Pp. 1244, with 527 illustrations. Berlin: Urban & Schwarzenberg, 1927.

Another German system of knowledge of the internal secretions.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Volume VI. Sanitation in the United States. By Col. Weston P. Chamberlain, M.C. In the American Expeditionary Forces. By Lieut. Col. Frank W. Weed, M.C. Prepared under the Direction of Maj. Gen. M. W. Ireland, The Surgeon General. Cloth. Price, $3.25. Pp. 1141, with illustrations. Washington: Government Printing Office, 1926.

A systematic account of the sanitation and hygiene of American camps in the World War.

THE EFFECT OF TREATMENT ON THE WASSERMANN REACTIONS OF SYPHILITIC PATIENTS. By Ernest E. Glynn, M.A., M.D., F.R.C.P., R. E. Roberts, M.D., B.Sc., and Phoebe M. Bigland, M.D., M.R.C.P., D.P.H. Medical Research Council. Special Report Series, No. 107. Paper. Price, 3s. 6d. net. Pp. 95, with illustrations. London: His Majesty's Stationery Office, 1926.

Proof by Wassermann test controls that both arsphenamine and mercury are necessary in successful treatment.

SEX HYGIENE: The Anatomy, Physiology, and Hygiene of the Sex Organs. By Dr. Julia Kinberg-von Sneidern, and Dr. Alma Sundquist. Translated by Mary E. Collett, Ph.D. Cloth. Price, $1.75. Pp. 114, with illustrations. New York: Henry Holt & Company, 1926.

Translation of a Swedish school book which is technical and makes no concessions to illiteracy.

DIE LEITUNGSBAHNEN DES SCHMERZGEFÜHLS UND DIE CHIRURGISCHE BEHANDLUNG DER SCHMERZZUSTÄNDE. Von Professor Dr. O. Foerster. Sonderbände zu Bruns' Beiträgen zur klinischen Chirurgie. Paper. Price, 19.50 marks. Pp. 360, with 104 illustrations. Berlin: Urban & Schwarzenberg, 1927.

Extensive German monograph on surgical control of pain.

HOSPITAL LAW. By John A. Lapp, Compiler of Important Federal Rules and Regulations, and Dorothy Ketcham, University Hospital, Ann Arbor, Mich. Cloth. Price, $8. Pp. 557. Milwaukee: Bruce Publishing Company, 1926.

A legal compilation of court decisions governing hospital practice.

LE BACTÉRIOPHAGE ET SON COMPORTEMENT. Par F. D'Herelle, directeur du service bactériologique, Conseil International, Sanitaire, Maritime et Quarantenaire d'Égypte. Second edition. Paper. Pp. 551. Paris: Masson & Cie, 1926.

Newest views of the bacteriophage by its proponent.

CONTRIBUTION À L'ÉTUDE DES TROUBLES CARDIO-VASCULAIRES DANS LES ANÉVRYSMES ARTÉRIO-VEINEUX TRAUMATIQUES. Par le Docteur Edouard Desjardins, de la faculté de médecine de Paris. Paper. Pp. 169. Paris: Louis Arnette, 1926.

Monograph on traumatic aneurysm.

THE BELOVED PHYSICIAN: SIR JAMES MACKENZIE. By R. Macnair Wilson. Cloth. Price, $4. Pp. 316, with illustration. New York: Macmillan Company, 1926.

Biography of a great clinician by a disciple.

LEHRBUCH DER SPEZIELLEN CHIRURGIE FÜR STUDIERENDE UND AERZTE. Herausgegeben von Hofrat Prof. Dr. J. Hochenegg, Vorstand der II. Chirurgischen Klinik in Wien, und Geh. Med.-Rat Prof. Dr. E. Payr, Direktor der chirurgischen Universitäts-Klinik in Leipzig. Erster Band. 1. Hälfte. Chirurgie des Kopfes, des Halses, der Brust, der Wirbelsäule, des Rückenmarkes und des Beckens. Erster Band. 2 Hälfte. Chirurgie der Brust, der Wirbelsäule, des Rückenmarkes und des Beckens. Second edition. Paper. Price, 36 marks. Pp. 1244, with 527 illustrations. Berlin: Urban & Schwarzenberg, 1927.

RESEARCHES ON HOOKWORM IN CHINA: Embodying the Results of the Work of the China Hookworm Commission, June, 1923, to November, 1924. By W. W. Cort, J. B. Grant, N. R. Stoll and Other Collaborators. Monographic series, No. 7, of the American Journal of Hygiene. Paper. Pp. 398, with illustrations. Baltimore: The American Journal of Hygiene, 1926.

REPORT ON THIRD INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, PARIS, APRIL, 1925. By Commander William Seaman Bainbridge, M. C., United States Naval Reserve Forces, Member of Permanent Committee Delegate from the United States. Paper. Pp. 111, with illustrations. Washington, D. C., 1926.

PARALYSESTUDIEN BEI NEGERN UND INDIANERN. Ein Beitrag zur vergleichenden Psychiatrie. Von Dr. Felix Plaut, Professor an der Universität München. Mit einem Geleitwort von Professor Emil Kraepelin. Paper. Price, 9.60 marks. Pp. 98, with 15 illustrations. Berlin: Julius Springer, 1926.

L'ANNÉE obstétricale (travaux de 1924). Par H. Vignes, accoucheur des hôpitaux de Paris, et J. Dauphin. Revue analytique des travaux français et étrangers, par J. Dauphin. Précedée de onze chapitres consacrés a des questions obstétricales d'actualité par H. Vignes. Paper. Price, $1. Pp. 128. Paris: Masson & Cie, 1926.

FERMENTFORSCHUNG. Herausgegeben von Emil Abderhalden, Geh. Med.-Rat, Prof. Dr. med. et phil. h. c., Direktor des physiologischen Institutes der Universität Halle a. S. 9. Jahrgang. Neue Folge. 2. Jahrgang. 1 Heft. Paper. Pp. 116. Berlin: Urban & Schwarzenberg, 1926.

STATE-AIDED HOSPITALS IN PENNSYLVANIA. A Survey of Hospital Finances, Resources, Extent of Service, and the Nursing Situation. Bulletin No. 25. By Emil Frankel, Statistician. Paper. Pp. 102. Harrisburg: Commonwealth of Pennsylvania Department of Welfare, 1926.

DIE GASTROSKOPIE UND IHRE NEUREN ERGEBNISSE. Eine Anleitung zur Erlernung der Technik und Deutung der Befunde. Von Dr. Roger Korbsch, Chefarzt des Elizabeth-Krankenhauses, Oberhausen. Paper. Price, 4.20 marks. Pp. 76, with 5 illustrations. Berlin: S. Karger, 1926.

RECENT ADVANCES IN PHYSIOLOGY. By C. Lovatt Evans, D.Sc., M.R.C.S., L.R.C.P., Jodrell Professor of Physiology, University College, London. Second edition. Cloth. Price, $3.50. Pp. 370, with 70 illustrations. Philadelphia: P Blakiston's Son & Company, 1926.

STATE DEPARTMENT OF HEALTH OF THE STATE OF CONNECTICUT, BUREAU OF VITAL STATISTICS. Seventy-Second Registration Report of Births, Marriages, Divorces and Deaths for the Year Ended December 31, 1919. Cloth. Pp. 243. Hartford, 1926.

ERGEBNISSE DER GESAMTEN MEDIZIN. Herausgegeben von Prof. Dr. Th. Brugsch, Oberarzt der II. medizinischen Klinik der Charité in Berlin. IX.—Angina pectoris. Von Prof. Dr. Hans Kohn. Paper. Pp. 276. Berlin: Urban & Schwarzenberg, 1926.

Medicolegal

Permanence of Disability—Question as to Operation

(General Accident, Fire & Life Assurance Corp. v. Industrial Accident Commission et al. (Calif.), 246 Pac. R. 570)

The District Court of Appeal of California, second district, division 1, in affirming an award under the workmen's compensation, insurance and safety act of that state, says that the claimant suffered two accidents, each of which affected his right knee, the second accident occurring some three years and six months after the first. The assurance corporation contended that evidence was lacking to indicate that the claimant ever suffered any permanent disability as the result of the injuries of which he made complaint. But the report on the case of one of the physicians included the statement that the patient had a chronic internal derangement of the right knee joint. The diagnosis of another physician was that a mechanical derangement of the right knee joint existed, for the relief of which he recommended a surgical operation, closing with the statement, "We cannot expect any improvement in his present condition by conservative methods." A third physician gave it as his opinion that undoubtedly there was a chronic derangement of the right knee joint, and the condition had reached a permanent stage unless operative procedure was thought advisable.

The question of permanence also involved a determination as to whether a surgical operation would relieve the condition of the knee joint. The consensus of opinion as expressed by the physicians called on to give testimony regarding the advisability of performing an operation was that it would be exploratory in its nature and consequently problematic as to its outcome. One of them said that knee joint surgery should be done only by a surgeon competent to do such work. Another surgeon stated, in effect, that the operating surgeon would not know the condition of the knee to any certainty until after the knee joint was opened, and that, unless such surgeon was very skilful, the disability would probably be increased rather than diminished. In the face of such expert testimony, the patient was not under compulsion to take the risk of the operation with the attending possible, if not probable, result of a worse rather than a better knee. This court thinks, therefore, that the finding by the commission that such injury caused permanent disability was fully justified.

The "permanent disability" of the knee joint was a "new and further disability" within the meaning of the provision of the statute relative to proceedings to recover compensation for "new and further disability."

Insured Justified in Following Advice of Physicians

(Emerson v. Old Line Life Ins. Co. (Wis.), 208 N. W. R. 793)

The Supreme Court of Wisconsin, in affirming a judgment in favor of the plaintiff, on an accident insurance policy, says that the policy provided that:

> Written notice of injury on which claim may be based must be given to the company within twenty days of the accident causing such injury. . . . Failure to give notice within the time provided in this policy shall not invalidate any claim if it shall be shown not to have been reasonably possible to give such notice, and that notice was given as soon as it was reasonably possible.

This case presented the question of whether an injured person who has had an accident resulting in an internal injury may rely on representations by reputable physicians that his injury or pain and suffering were not caused by the accident, though he himself up to the time of receiving medical advice believed his condition due to the accident. When it is borne in mind that notice is required to be given the insurer, not only for the purpose of advising it that an injury has occurred but for the purpose of enabling it to ascertain whether other provisions of the policy calling for medical treatment are complied with, it is difficult to come to the conclusion that the insured person is not justified in following the advice of reputable physicians whom he seasonably employs.

Aug. 10, 1924, the plaintiff, in throwing a baseball, slipped, fell, and strained himself. The strain was localized in his body, extending from the right kidney diagonally to the crotch. It immediately produced a violent pain, and the pain continued without interruption. About a week or so after the accident he went to a physician, taking along a blank notice of injury which he asked the physician to fill out so that he could send it to the insurance company; but, he testified, the physician advised him that his condition came from appendicitis and the company would laugh at him if he made a claim under his accident policy, so he refrained from sending in the blank. After that he consulted another physician, who did not change the diagnosis, and about the middle of September he consulted a third physician, who thought that the pain and disability resulted from appendicitis, but was evidently in doubt, as he advised going to the Mayo Clinic. In the meantime a swelling had developed just over the appendix and at the seat of the strain and pain, which swelling gradually continued getting larger, and a considerable quantity of pus was passed off. The plaintiff arrived at the clinic, October 17, and was operated on the next day. His appendix was removed, and it was discovered that there was an abscess of the right kidney which needed to be drained. November 23, the kidney specialist advised him that in his opinion the condition of the kidney resulted from the accident of August 10, and the next day the plaintiff mailed a notice of injury to the insurance company. His was doubtless one of those not rare cases that cannot be definitely determined until the patient is opened up. A jury having been waived, a finding by the court that the notice was given within the provision of the policy could not be set aside.

It is admittedly to the interest of the insurer that the insured should seek early medical aid after an injury. If he does so and is advised by reputable physicians that his injury is not referable to the accident, it would be strange to say that he cannot rely on their opinion but must use his own. It is idle, useless and expensive to consult physicians if one does not intend to follow their advice when there is nothing obviously wrong about it. If the condition of the injured person presents a fair case for medical judgment, and that is honestly given by a reputable physician, it justifies the insured in following it.

A provision in the policy that indemnity was payable for such period as the insured was under the regular treatment of a legally qualified physician or surgeon at least once in each seven days, the defendant contended, was not complied with after the plaintiff left the clinic. But the plaintiff testified that he had been under the charge, direction and treatment of a physician connected with the clinic, from the time of leaving it up to the time of the trial, and testified that he bandaged himself every morning, and that pus had flowed from the time that he left the hospital up to the time of the trial. Evidence to the contrary was not presented. The supreme court thinks that the trial court was justified in finding that there had been a compliance with the quoted portion of the policy.

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Philadelphia, Jan. 31-Feb. 2. Dr. Kerwin Kinard, Bryant Building, Kansas City, Mo., Corresponding Secretary.

American College of Physicians, Cleveland, Feb. 21-25. Dr. G. M. Piersol, 1913 Spruce Street, Philadelphia, Secretary General.

American Society for the Control of Cancer, New York City, March 5. Dr. T. M. Debevoise, 26 Broadway, New York City, Secretary.

Pacific Coast Surgical Association, Del Monte, California, Feb. 25-26. Dr. E. L. Gilcreest, Fitzhugh Building, San Francisco, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 18-19. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

Tri-States Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Feb. 1-3. Dr. A. F. Cooper, Bank of Commerce Building, Memphis, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

2: 1-120 (Oct.) 1926

*Auricular Paroxysmal Tachycardia. Effect of Epinephrine, Quinidine, Atropine and Digitalis. H. L. Otto and H. Gold, New York.—p. 1.
*Transformation of Central into Peripheral Pulse in Patients with Aortic Stenosis. H. S. Feil and L. N. Katz, Cleveland.—p. 12.
Cardiac Pain. A. Lambert, New York.—p. 18.
Effect of Pituitary Extracts on Mammalian Coronary Vessels and Cardiac Muscle. C. M. Gruber, St. Louis.—p. 38.
Conduction in His' Bundle. D. Scherf, Vienna, and C. Shookhoff, New York.—p. 48.
*Posttraumatic Disturbances of Heart. A. S. Hyman, New York, and J. L. Fisher, Youngstown, Ohio.—p. 61.
Auricular Fibrillation. P. S. Barker, Ann Arbor, Mich.—p. 72.

Effect of Drugs on Auricular Paroxysmal Tachycardia.—The effects of epinephrine, quinine, quinidine, atropine and digitalis were studied by Otto and Gold in a patient subject to spontaneous attacks of auricular paroxysmal tachycardia. Epinephrine induced attacks in this patient indistinguishable from those occurring spontaneously. Quinine failed to abolish attacks occurring spontaneously or those produced by epinephrine. Under quinidine administration, spontaneous attacks did not occur, nor could they be induced by epinephrine. Paralysis of the vagus by atropine prevented the induction of a paroxysm by epinephrine. Digitalis in a full dose did not produce an attack, and did not prevent the induction of a paroxysm by epinephrine. Attention is called to the fact that a drug may prevent the onset of an attack but be without effect in stopping a paroxysm in progress.

Transformation of Pulse in Aortic Stenosis.—The subclavian and radial pulses in patients with aortic stenosis were recorded by Feil and Katz simultaneously by the recently developed optical method. The contours were studied and analyzed with special reference to the transformation of the subclavian into the radial pulse. The transformation of the subclavian into the radial pulse characteristic of this lesion is described, and the factors responsible for this change are analyzed. Evidence is given to show that the anacrotic wave in the radial is the peripheral manifestation of the sudden break of the subclavian pulse occurring early in the ascent, the relation being the same as that existing between the incisuria of the normal subclavian pulse and the dicrotic wave in the radial.

Posttraumatic Disturbances of Heart.—Hyman and Fisher report a case of stab wound of the heart, in which the wound in the ventricle wall was sutured with silk. The sutures did not penetrate into the ventricular cavity. A complete study of the heart was made about eight months after the injury. The T-waves were inverted only in the first lead. Extrasystoles had developed, apparently arising in the myocardium of the right ventricle, whereas the original injury and the buried foreign bodies were within the left ventricular wall. Squeezing of the heart apex produced a sharp, agonizing pain referred to the left shoulder. There was apparently not any retrosternal pain or sensation, and not any referred pain to the left arm and hand. A further by-effect in this case was paralysis of the left diaphragm which occurred after the accident, and which suggests that the left phrenic nerve was severed in the original stab wound or at the time of the operation.

American Journal of Ophthalmology, Chicago

9: 801-872 (Nov.) 1926

Siderosis Bulbi. M. P. Motto, Cleveland.—p. 801.
Hemangioma of Choroid. E. J. Lent and M. B. Lyon, South Bend, Ind.—p. 804.
Pigment Changes in Conjunctiva of Lids in Trachoma. A. Herschendörfer, Lwów, Poland.—p. 812.
Paresis of Convergence Following Epidemic Encephalitis. W. F. Hoffman, Seattle, Wash.—p. 823.
Changes in Refraction in Diabetes Mellitus. A. B. Dykman, Portland, Ore.—p. 825.
Tonometry Before Cataract Extraction. H. Ferrer, Havana, Cuba.—p. 829.
Sudden and Transient Blindness. H. Friedenwald, Baltimore.—p. 831.
Incipient Glaucoma. W. W. Lewis, St. Paul.—p. 836.
Solar Macular Injury. H. V. Wurdemann, Seattle, Wash.—p. 841.
Case of Electric Cataract. J. J. Horton, Eagle Pass, Texas.—p. 841.
Acute Conical Cornea. F. A. Morrison, Indianapolis.—p. 842.
Lid and Fixation Forceps for Tarsectomy and Grattage. P. Richards, Fort Defiance, Ariz.—p. 843.

American Journal of Physiology, Baltimore

78: 495-736 (Nov. 1) 1926

Epinephrine and Tonus of Decerebrate Rigidity. E. L. Porter, Galveston, Texas.—p. 495.
*Cause of Delayed Clotting of Hemophilic Blood. W. H. Howell and E. B. Cekada, Baltimore.—p. 500.
*Prothrombin. E. B. Cekada, Baltimore.—p. 512.
Female Sex Cycle as Factor in Learning in Rat. J. Ball, Minneapolis.—p. 533.
Experimental Analysis of Simple Action Potential Wave in Nerve by Cathode Ray Oscillograph. J. Erlanger, G. H. Bishop and H. S. Gasser, St. Louis.—p. 537.
Action Potential Waves Transmitted Between Sciatic Nerve and Spinal Roots. J. Erlanger, G. H. Bishop and H. S. Gasser, St. Louis.—p. 574.
Distortion of Action Potentials as Recorded from Nerve Surface. G. H. Bishop, J. Erlanger and H. S. Gasser, St. Louis.—p. 592.
*Regulation of Respiration: IV. Tissue Acidity, Blood Acidity and Pulmonary Ventilation. R. Gesell and A. B. Hertzman, Ann Arbor, Mich.—p. 610.
Effects of Polarization on Activity of Vertebrate Nerve. G. H. Bishop and J. Erlanger, St. Louis.—p. 630.
*Absorption of Bile Pigment from Intestine. J. L. Bollman, C. Sheard and F. C. Mann, Rochester, Minn.—p. 658.
Studies in Avian Diabetes and Glycosuria. T. Koppányi, A. C. Ivy, A. L. Tatum and F. T. Jung, Chicago.—p. 666.
*III. Muscle Hemoglobin as Source of Bile Pigment. G. H. Whipple and F. S. Robscheit-Robbins, Rochester, N. Y.—p. 675.
Suprarenal Insufficiency in Dogs: I. Control Animals Not Subjected to Treatment. J. M. Rogoff and G. N. Stewart, Cleveland.—p. 683.
Id.: II. Blood Studies in Control Animals Not Subjected to Treatment. J. M. Rogoff and G. N. Stewart, Cleveland.—p. 711.

Cause of Delayed Clotting of Hemophilic Blood.—Three cases of hemophilia were studied by Howell and Cekada with especial reference to the prothrombin of the blood and the characteristics of the blood platelets. They state that the prothrombin in hemophilic blood does not differ from that of normal blood either in its concentration or its properties. The blood platelets in hemophilic blood are more resistant than those of normal blood, as shown by counting and by blood smears of the shed blood. Their slow disintegration accounts for the delayed clotting.

Nature of Prothrombin.—The provisional hypothesis is made by Cekada that the prothrombin molecule or complex consists of two thrombin groups. Activation by calcium or other reagents, or by standing in aqueous solution, consists in the precipitation of one of these groups as a modified thrombin, water insoluble and fibrinolytic—the other remains in solution as normal thrombin.

Chemical Regulation of Respiration.—The chemical regulation of respiration was studied by Gesell and Hertzman with the continuous method of recording changes in acidity in the circulating blood and body fluids. The relation of respiration to the acidity of the respiratory center was analyzed by a study of the changes in acidity of the arterial and venous blood and the cerebrospinal fluid. Comparison of the arterial and venous blood acidity curves gave information on the passage of acid and base between blood and tissue.

Absorption of Bile Pigment from Intestine.—It is definitely stated by Bollman et al. that intestinal absorption of bilirubin does not occur under the conditions of the experiments. The bilirubin content of the blood of the mesenteric veins is essentially the same as the bilirubin content of arterial blood. This is equally true whether the specimens are obtained from a fasting animal or from animals at different periods of digestion, or whether large amounts of bile have been previously introduced into the intestines. Large amounts of fresh gallbladder bile administered directly into the intestine are without effect on the rate of developing jaundice following ligation of the common bile duct and extirpation of the gallbladder.

Muscle Hemoglobin Source of Bile Pigment.—Whipple and Robscheit-Robbins state that solutions of muscle hemoglobin free from blood hemoglobin introduced intraperitoneally, intramuscularly and intravenously are promptly broken down, and, at least in part, excreted as bile pigment in the urine (dog). It seems highly probable, therefore, that the wear and tear or physiologic wastage of muscle hemoglobin in the body is a source of bile pigments. What the relative importance of muscle hemoglobin and blood hemoglobin may be in the production of bile pigment within the body is unknown—a stimulating and disturbing variable.

Archives of Dermatology and Syphilology, Chicago

14: 503-634 (Nov.) 1926

*Calcification of Skin, Including Epiderm, with Extensive Bone Resorption. F. D. Weidman and L. W. Shaffer, Philadelphia.—p. 503.
*Pigmented Stripe in Nail. H. J. Templeton, Oakland, Calif.—p. 533.
*XLIX. Dermatitis of Diaper Region in Infants (Jacquet Dermatitis). J. V. Cooke, St. Louis.—p. 539.
*External Irritation as Factor in Causation of Lupus Erythematosus Discoides. D. King-Smith, Toronto.—p. 547.
*Treatment of Neurosyphilis by Malaria. P. A. O'Leary, W. H. Goeckerman and S. T. Parker, Rochester, Minn.—p. 550.
*Treatment of Pruritus Ani by Electric Ionization. E. L. Oliver, Boston.—p. 560.

Calcification of Skin.—Weidman and Shaffer had the opportunity to examine the hand of an old man affected by senile elastosis, which had been amputated a year previously. There was calcification at several places. The calcification was distributed not only in the epiderm but also widely throughout the corium, involving sweat ducts and glands, pacinian corpuscles and nerve trunks, as well as fibrous tissue of the corium. This was regarded as the expression of calcareous metastasis, because there was definite resorption of the bone in several parts of the skeleton. The latter was brought out by roentgenograms, and by both gross and microscopic study of the amputated hand; it was probably inaugurated during an attack of osteomyelitis which occasioned the amputation a year previously. At a later examination, there was not an excess of blood calcium. All of the cellular elements of the marrow were atrophic, the red elements being replaced by fat. Weidman and Shaffer believe that this is the first case of calcification of the skin in which epithelial structures were involved; other cases have concerned only the collagenous parts. It is probably also unique in that the peripheral nerves were affected. They believe that a new function, i. e., excretion of calcium, must be added to the other functions of the skin, albeit only in pathologic states. In calcareous metastasis, a fourth set of acid-excreting organs, namely the sweat glands, must receive consideration in the future.

Pigmented Stripe in Nail.—Linear pigmentations of the nail would seem to be of infrequent occurrence. One case is presented by Templeton with histologic observations, and with a consideration of the various possible causative factors. The conclusion is reached that this case is probably one of pigmented nevus of the nail.

Dermatitis of Diaper Region.—Cooke concludes his discussion as follows: The common erythematous or papulovesicular dermatitis of the gluteal region in infants, described by Jacquet, is caused by ammonia in the diaper, and is, therefore, a dermatitis venenata. The ammonia is formed in the wet diaper in situ by the growth of a saprophytic bacillus (*Bacterium ammoniagenes*), which splits the urinary urea into ammonia. This bacterium is derived from the intestinal contents, and infests the diaper area as a result of soiling by feces. The use of diapers dried after being impregnated with an antiseptic, such as mercuric chloride (1:4,000) caused a prompt cessation of ammonia formation, and rapid regression of the skin lesions.

External Irritation and Lupus Erythematosus.—In the series of seventy-nine cases of lupus quoted by King-Smith, twenty-nine patients, or slightly more than 27 per cent, gave a definite history of a previous irritation.

Malaria Treatment of Neurosyphilis.—O'Leary and his associates are very enthusiastic about the results of the treatment of neurosyphilis, particularly early general paralysis, with malaria, but they do not feel justified in making conclusive deductions at this time of the value of the method.

Electric Ionization for Pruritus Ani.—Results in the cases reported by Oliver are similar to those reported by several others. He feels that this method of treatment deserves a trial in those cases of pruritus ani which have proved resistant to the more usual methods of treatment. It is not proclaimed as a sure cure, but as an additional therapeutic measure in the fight against this distressing malady.

Archives of Neurology and Psychiatry, Chicago

16: 539-682 (Nov.) 1926

Neurology and Education. F. Tilney, New York.—p. 539.
Decerebration: III. Labyrinth. L. Davis and L. J. Pollock, Chicago.—p. 555.
Central Visual Connections: III. Relationship Between External Geniculate Body. Optic Radiation and Visual Cortex in Man. T. J. Putnam, Boston.—p. 566.
*Nonsyphilitic Pupillary Inaction Associated with Vegetative Imbalance. J. M. Nielsen and L. V. Stegman, Battle Creek, Mich.—p. 597.
Lemniscus Symptoms Following Epidemic Encephalitis; Bilateral Impairment of Deep Sensation. W. B. Cadwalader, Philadelphia.—p. 605.
Methods of Preventing Delinquency. R. P. Truitt, New York.—p. 613.
*Weight of Heart in Schizophrenia and Other Mental Disorders. M. Fulstow, Boston.—p. 620.
Dental Sensation in Syphilis of Central Nervous System. W. R. Pentz and M. C. Borman, Philadelphia.—p. 629.

Nonspecific Pupillary Inaction.—Nielsen and Stegman report a case of acquired immobility of the pupils without either syphilis or a local eye pathologic condition as a basis. Reasons are advanced suggesting the possibility that the condition may have arisen on a basis of vegetative imbalance.

Weight of Heart in Schizophrenia.—Among 540 psychotic cases submitted to necropsy, Fulstow says that there were 56 per cent of 179 cases of schizophrenia with hearts weighing less than 300 Gm., 49 per cent of the men and 66 per cent of the women. Hearts of psychotic patients grouped together undergo the same changes in weight, with increasing age, as do those of sane persons. Schizophrenia in this series is not an exception to this rule, maintaining a middle course throughout as compared with the other psychoses.

Archives of Pathology and Laboratory Medicine, Chicago

2: 631-798 (Nov.) 1926

*Pathology of "Icterus Catarrhalis." P. Klemperer, J. A. Killian and C. G. Heyd, New York.—p. 631.
*Primary Acute Aortitis. B. Z. Rappaport, Chicago.—p. 653.
*Hodgkin's Disease (Lymphogranulomatosis). M. Barron, Minneapolis.—p. 659.
*Adenoma of Suprarenal. H. R. Spencer, Baltimore.—p. 691.
Hemepoietic Effect in Rabbits of Intravenous Injections of Cells, Nuclei and Nucleic Acids from Blood of Fowls. O. Larsell, H. T. Nokes and B. I. Phillips, Portland, Ore.—p. 698.
Flocculation Test for Syphilis: I. Results Obtained by Different Methods of Diluting Antigen. C. B. McGlumphy, Chicago.—p. 704.
Experimental Tar Cancer. W. H. Woglom, New York.—p. 709. C'td.

Pathology of Icterus Catarrhalis.—Klemperer et al. assert that the so-called "icterus catarrhalis" is neither a morbid nor a pathologic entity. Three forms can be differentiated: 1. Icterus due to obstruction of the common duct following gastro-intestinal catarrh—true catarrhal jaundice. 2. Icterus due to degeneration and multiple necrosis of the liver, hematogenous in origin. 3. Icterus due to cholangitis, mostly of hematogenous origin. The etiologic factor of group 2 is not known; bacterial toxins of various types have to be considered. It is probable that in group 3, atypic strains of *Bacillus paratyphosus* are of etiologic importance. It is possible that groups 2 and 3 frequently merge with each other. The evidence of hepatic derangement in cases of group 2 suggests careful observation of these cases, and dietary regulations, in order to prevent further injury to the liver. The history, the presence of urobilin in the urine and the positive results of practically all the liver function tests permit a differentiation from group 1. Further studies are necessary, however, in order to make a correct differentiation of groups 2 and 3 possible.

Primary Acute Aortitis.—A case of primary acute aortitis due to *Streptococcus viridans* is reported by Rappaport, with no aortic endocarditis present. A syphilitic aortitis was associated with the acute aortitis.

Hodgkin's Disease.—Hodgkin's disease (lymphogranulomatosis) is an entity anatomically as well as clinically. It is

an infectious granuloma caused by an organism not yet identified. Reasons are here presented by Barron to suggest that the etiologic agent is probably an animal parasite. Neither tuberculosis nor the tubercle bacillus bear any etiologic relationship to this disease. Caseation necrosis may be extensive in the lymph nodes of Hodgkin's disease, and may thus resemble the necrosis of tuberculosis and lead to a mistaken diagnosis. The pseudodiphtheria bacillus—*B. hodgkini*—does not have a causal relationship to this disease. The prognosis of this disease is always hopeless. Not any chronic infectious disease caused by any known bacterium is so invariably fatal. Roentgen-ray therapy may cause temporary symptomatic relief, but it apparently does not affect the progress of the disease. An incontrovertible diagnosis can be established only through a biopsy. Three cases are cited, and a summary is given of twenty-four cases studied at necropsy.

Adenoma of Suprarenal.—In the three cases reported by Spencer, benign glandular tumors of the suprarenal cortex were observed. The type of the cell and cell arrangement were more or less similar to those of the suprarenal cortex. The patients were all over 40 years of age. There were two women and one man. The histories did not disclose any evidence of cortical hyperactivity, such as has been reported in cases with larger and more actively growing tumors. Marked hyperactivity was unlikely, because of the small size and slow growth of the tumors observed.

Boston Medical and Surgical Journal

195: 889-928 (Nov. 4) 1926

*Relation of Small Obstructive Prostate to Certain Other Bladder Conditions. A. L. Chute, Boston.—p. 889.
*Significance of Blood Sedimentation Time in Gynecology and Obstetrics. I. H. Noyes and A. Corvese, Providence, R. I.—p. 891.
Treatment of Spontaneous Pneumothorax. H. F. Gammons, Alexandria, La.—p. 896.

Enlarged Prostate and Bladder Conditions.—Chute calls attention to the fact that the obstruction produced by any of the several types of small prostate may be an element in the causation of stones in the bladder and of diverticula of the bladder, and that unless this underlying condition is recognized and remedied the patient will not get the relief he would otherwise experience.

Significance of Blood Sedimentation Time.—Noyes and Corvese employed the Linzenmeier technic 197 times on 146 gynecologic and obstetric patients, of whom several were apparently normal healthy women, while the others were afflicfed with one or more of a wide variety of disease conditions. They found that in normal uterine pregnancy, sedimentation time diminishes as pregnancy advances. A greatly decreased sedimentation time may be expected in all acute inflammatory conditions of the pelvis and in severe toxemias due to absorption of native or foreign proteins, bacterial or otherwise. The test may prove to be an aid in diagnosing between acute pelvic inflammation and ruptured ectopic gestation. In pelvic inflammation a sedimentation time greater than sixty minutes is evidence against the presence of localized pus in the pelvis, and one under thirty-five minutes usually indicates an active infection. The authors urge that the sedimentation test alone should not be relied on in determining a safe time for laparotomy in cases of acute pelvic inflammation, as a sedimentation time of less than thirty minutes does not always signify a bad prognosis or a protracted recovery. It is of value, however, when considered together with the temperature, leukocyte count and objective clinical symptoms. This simple test is sufficiently dependable to warrant its use in gynecology in all cases in which a leukocyte count is considered desirable.

Colorado Medicine, Denver

23: 343-382 (Nov.) 1926

Malnutrition and Dental Defects in Colorado Children. Moderate and High Altitudes. R. P. Forbes, Denver.—p. 346.
Visceroptosis. F. C. Buchtel, Denver. —p. 352.
Health Conditions on Isthmus of Panama. E. A. Bocock, Denver. —p. 366.
Causes of Recurrent Inguinal Hernia. A. P. Kinball, Casper, Wyo. —p. 373.

Florida Medical Association Journal, Jacksonville

13: 102-125 (Nov.) 1926

Labor—Normal and Abnormal. S. R. Norris, Jacksonville.—p. 102.
Early Diagnosis of Tuberculosis. W. A. Claxton, Miami.—p. 105.
Causes of Insanity. W. H. Spiers, Orlando.—p. 109.
Immunization—Every Doctor a Health Officer. F. A. Brink, Jacksonville.—p. 113.
Opportunities for Study in Vienna. A. K. Wilson, Jacksonville.—p. 115.

Illinois Medical Journal, Oak Park

50: 353-436 (Nov.) 1926

Modern Treatment of Goiter. H. M. Thomas, Jr., Baltimore.—p. 385.
Cardiac Manifestations of Goiter. F. O. Deneen, Bloomington.—p. 389.
Stream Pollution; Methods of Prevention. L. Pearse, Chicago.—p. 396.
Medical Conditions that Influence Scholastic Standing. H. T. Larsen, Chicago, and J. H. Beard, Urbana.—p. 398.
Surgical Diathermy in Accessible Neoplasms. D. Kobak, Chicago.—p. 403.
Surgical Treatment of Chronic Osteomyelitis. D. W. Deal, Springfield. —p. 406.
Dangers of Iodine in Treatment of Goiter. J. H. Hutton, Chicago.—p. 408.
Spontaneous Pneumothorax Occurring in Untreated Lung During Artificial Pneumothorax Recovery. R. Dunham, Oak Forest.—p. 412.
Course of Pulmonary Tuberculosis as Influenced by Nonthoracic Surgery.. W. R. Abbott, Chicago.—p. 414.
Radiotherapy of Exophthalmic Goiter. H. Swanberg, Quincy.—p. 418.
Diathermy in Removal of Tonsils. H. M. Thometz, Chicago.—p. 420.
Diagnosis of Severe Abdominal Crises. F. Bondurant, Cairo.—p. 423.
Pneumococcic Peritonitis; Case. R. L. Furby, Chicago.—p. 426.
Great National Health Problem. J. M. McManus, Cairo.—p. 428.
Coma. Simulating Diabetic Coma. H. V. Gould, Chicago.—p. 430.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

30: 1-99 (Nov.) 1926

Influence of Asphyxia on Action of Convulsant Dyes; Their Entrance into Central Nervous System: II. H. C. Syz, Baltimore.—p. 1.
*Effects of Ephedrine on Perfused Frog Heart and Blood Vessels. O. W. Barlow and T. Sollmann, Cleveland.—p. 21.
*Studies on Strychnine. G. Newman, New York.—p. 31.
*Action of Bismuth on Circulatory System. G. A. Masson, Edinburgh.—p. 39.
One of Factors Governing Relaxation of Nonstriated Muscle (Intestine) by Commercial Pituitary Extracts. C. M. Gruber, St. Louis.—p. 73.
Influence of Hydrazine and Its Derivatives on Metabolism: I. Effect of Substitution in Hydrazine Molecule on Hypoglycemic Action of Hydrazine. S. Izume and H. B. Lewis, Ann Arbor, Mich.—p. 87.
Lack of Anaphylactoid Changes in Lungs of Guinea-Pigs After Intravenous Administration of Mercurochrome-220 Soluble. J. E. Sanner and J. H. Hill, Baltimore.—p. 95.

Effect of Ephedrine on Heart.—Barlow and Sollmann assert that the dominant effect of ephedrine, when perfused through the frog heart, is muscular depression, evidenced by heart block, not influenced by atropine, and apparently identical with the muscular depressant action of epinephrine. Accelerator stimulation occurs only occasionally, and is always very slight. The fact that both drugs produce both effects suggests that there is some natural connection between the sympathomimetic action and the muscular depression. The blood vessels of the frog respond to ephedrine with pure constriction. The effective concentration of ephedrine required for a vasoconstriction, i. e., 1 : 10, is the same that is required to produce heart block.

Studies on Strychnine.—Only traces of strychnine were present in the urine ninety-six hours after the oral administration of a dose of 4.68 mg. (6 mg. of the sulphate) to each of three adults. Strychnine was detected in the urine of one, but not in that of either of the other two, after 120 hours. Newman states that tetanus was also caused by the injection into the spinal canal of a trace of strychnine in an extract of tissues containing several hundred times as much of the tissue extract as of the strychnine.

Action of Bismuth on Circulatory System.—Kymographic and electrocardiographic experiments made by Masson on the heart in situ in dogs and cats show that profound alterations occur after the intravenous injection of one of the double salts of bismuth. All the fundamental functions of the heart muscle are affected. The action is a local toxic one on the heart muscle, the inhibitory mechanism not taking part in the production of the changes. Intravenous injections of bismuth cause marked lowering of blood pressure, which is largely secondary to the heart changes. These changes

are influenced largely by the rate at which the injection is given, and a second injection gives more pronounced changes, caeteris paribus, than the first. The actions of some other heavy metals on the circulatory system were investigated and compared with those of bismuth. Mercury and copper present marked similarity to bismuth in their effects; antimony, zinc and iron present a somewhat distant similarity, and nickel and tin do not present any similarity.

Journal of Urology, Baltimore

16:319-410 (Nov.) 1926

Horseshoe Kidney; Importance of Preoperative Diagnosis. J. A. C. Colston and W. W. Scott, Baltimore.—p. 319.
Papillary Carcinoma of Renal Pelvis. M. Meltzer, New York.—p. 335.
*Musculus Spiralis Papillae. M. Muschat, Philadelphia.—p. 351.
Ureteral Meatotomy for Removal of Stones from Ureter. H. C. Bumpus, Rochester, Minn.—p. 359.
Ureterocele. D. A. Brown, Madison, Wis.—p. 363.
Intramural Carcinoma of Dome of Bladder. J. D. Barney, Boston.—p. 369.
Foreign Body (Slippery Elm Bark) in Urinary Bladder. E. S. Pomeroy, Salt Lake City.—p. 377.
*Angioneurotic Edema of Entire Genito-Urinary System. N. Blaustein, New York.—p. 379.
Carcinoma of Penis. A. O. Wilensky, New York.—p. 391.
*Mercurochrome and Sugar in Treatment of Gonorrheal Urethritis and Complications. F. H. Redewill, J. E. Potter and H. A. Garrison, San Francisco.—p. 397.

Musculus Spiralis Papillae.—A new muscle, called musculus spiralis papillae, in the human renal pelvis is described by Muschat. The general appearance of the muscle as a whole is that of a spiral, running around the calix, beginning with a heavy encircling formation of musculature at the base, turning obliquely at the middle and finishing up the rest of the spiral encircling the mouth of the calix in the plane of the papillary tip. It is a definite anatomic entity constantly present in every human kidney as the author's control studies on fifteen other kidneys have shown. It seems very possible that the action of this "sphincter papillae" is that of a milking action on the papilla, an act of suction that might have further importance in the functioning of the human kidney.

Angioneurotic Edema of Genito-Urinary Organs.—Blaustein reports a case of angioneurotic edema involving the urethra, bladder, ureters and kidney as well as the external genitalia of a man, aged 36. The condition persisted for only four days. Blaustein proposes the term "regional anaphylactic vasoparalysis" for angioneurotic edema.

Mercurochrome and Sugar in Treatment of Gonorrheal Urethritis.—Redewill et al. assert that glucose, given with mercurochrome-220 soluble, activates the action of the dye, and reduces to a minimum the tendency to anaphylaxis in certain patients when given mercurochrome alone. In the treatment of acute and chronic gonorrhea, mercurochrome, with routine treatment, stops the discharge 30 per cent more quickly than routine treatment alone; with mercurochrome, acute gonorrhea is cured in one-third less time; glucose added to mercurochrome stops the discharge twice as quickly as routine treatment alone and cures the case in less than one-half the time. The ideal treatment is routine therapy with forty-eight hour intravenous injections of mercurochrome and glucose.

Laryngoscope, St. Louis

34:779-856 (Nov.) 1926

Progressive Deafness. Endocrine Malfunction as Important Etiologic Factor. C. H. Lawrence, Boston.—p. 779.
Maintenance of Attitude and Relation to Vestibular Mechanism. J. G. Wilson, Chicago.—p. 791.
Incidence of Otitis in 15,000 Acute Exanthemata: Handling Scarlet Fever Otitis Mastoiditis. F. V. Gowen, Philadelphia.—p. 799.
Otitis Externa Herpetica as Complication of Influenza Epidemic. M. R. Guttman, Chicago.—p. 805.
Acute Inflammation of Middle Ear. M. Metzenbaum, Cleveland.—p. 809.
Local Administrations of Bacterial Vaccines in Treatment of a Nasal Sinus Condition. H. Hays, New York.—p. 812.
Primary Epithelioid Cancer of Uvula. W. W. Carter, New York.—p. 820.
Reaction of Lung to Aspirated Peanut. J. D. Kernan, New York.—p. 823.
Preventable Diseases of Childhood. W. B. Chamberlin, Cleveland.—p. 827.
"Honest Confession is Good for Soul." D. MacFarlan, Philadelphia.—p. 834.
Tutocain; Local Anesthetic in Rhinolaryngology. O. D. Cunningham, Iowa City.—p. 837.
New Tonsil Expressor. A. Lobell, New York.—p. 855.

Medical Journal and Record, New York

124:593-664 (Nov. 17) 1926

Use of Vaccines and Serums in Communicable Diseases. R. O. Clock, Pearl River, N. Y.—p. 593. (To be concluded.)
Disease of Lymph Glands Caused by Tooth Infection. O. T. Osborne, New Haven, Conn.—p. 598.
Ureteral Obstruction as Etiologic Factor in Renal Calculus. A. Ravich, New York.—p. 600.
Congenitally Misplaced (Pelvic) Kidney. A. H. Fineman, New York.—p. 604.
*Dermatitis from Adhesive Plaster: Two Cases. D. W. Montgomery and G. D. Culver, San Francisco.—p. 606.
Serology of General Paralysis in Malaria Treated Cases. A. Ferraro and T. C. C. Fong, Washington, D. C.—p. 607. (To be continued.)
Stomach Diseases. J. W. Shuman, Los Angeles.—p. 611.
Pulmonary Abscess. M. Schwartz, Philadelphia.—p. 612.
Sex Hygiene of New Zealand Maori. E. A. Rout, London.—p. 614.
Principles in Treatment of Cancer. R. J. Behan, Pittsburgh.—p. 616.
Intravenous Therapy. J. H. Frick, Philadelphia.—p. 618.
Treatment of Hepatic Venous Cirrhosis. C. G. Cumston, Geneva, Switzerland.—p. 619.
Clinical Physiotherapy of Liver. J. Riviere, Paris.—p. 621.
Surgical Procedures with High Frequency Electric Currents. G. E. Ward, Baltimore.—p. 625.
Ultraviolet Therapy in Pediatrics. E. T. Wyman, Boston.—p. 628.
Diathermy: Physics; Indications. R. Kovacs, New York.—p. 631.
Treatment of Birthmarks by Physical Agents. J. J. Eller, New York.—p. 634.
Boyhood of Rev. Dr. Muhlenberg. R. Abbe, New York.—p. 637.
Leonardo Da Vinci, Anatomist and Physiologist. L. Vaccaro, Philadelphia.—p. 640.

Dermatitis from Use of Adhesive Plaster.—Montgomery and Culver conclude that the dermatitis which is produced by adhesive plaster is caused by the resin or turpentine which it contains.

Military Surgeon, Washington, D. C.

59:525-652 (Nov.) 1926

Peace Time Desertion in Regular Army. R. S. Porter.—p. 525.
Obsta Principiis. N. Walker, Toronto.—p. 538.
"Pill Artillery" in Mexico. H. W. Jones.—p. 545.
Hemihypertrophy: Case. W. H. Slaughter and J. P. Eberhardt.—p. 569.
Procurement of Surgical Instruments in War. R. C. Heflebower.—p. 574.
Medical Service in French Lines. B. K. Ashford.—p. 584.
Recollections of Some Old Medical Officers. H. C. Yarrow.—p. 509.

Missouri State Medical Association Journal, St. Louis

23:385-428 (Nov.) 1926

Nontuberculous Hips in Children Simulating Tuberculosis. C. B. Francisco, Kansas City.—p. 385.
Treatment of Tuberculosis of Hip. J. A. Key, St. Louis.—p. 388.
*Diagnosis of Brain Abscess: Cases. O. J. Dixon, Kansas City.—p. 398.
Concentrated Feedings in Infancy. H. L. Dwyer, Kansas City.—p. 403.
Blood Changes in Chronic Nephritis. W. A. Myers, Kansas City.—p. 405.
Minor Disturbances of Pregnancy. E. Lissack, Concordia.—p. 409.

Diagnosis of Brain Abscess.—Dixon reports four cases to illustrate the fact that one can nearly always elicit some very important symptom of brain abscess if a careful and thorough study is made of every case. Often cases of very extensive brain involvement pass unrecognized because of the absence of definite symptoms.

New Jersey Medical Society Journal, Orange

23:529-596 (Nov.) 1926

Essentials for Successful Prostatectomy. A. H. Lippincott, Camden.—p. 529.
Urographic Studies of Various Types of Congenital Renal and Ureteral Conditions. S. R. Woodruff, Jersey City.—p. 531.
Renal Vascular Disease. F. M. Allen, Morristown.—p. 543.
Heart in Cardiovascular Renal Disease. C. E. Teeter, Newark.—p. 547.
Therapeutic Problems of Renal Vascular Disease. T. Teimer, Newark.—p. 553.
Newer Therapy of Cardiovascular Renal Disease. H. I. Goldstein, Camden.—p. 556.

New York State Journal of Medicine, New York

26:921-960 (Nov. 15) 1926

*Intraperitoneal Transfusion in von Jaksch's Anemia. C. G. Grulee, Chicago.—p. 921.
*Chronic Pancreatitis. J. W. Hinton, New York.—p. 930.
Tonsil and Adenoid Problem in Nassau County. G. H. Cox, Glen Cove, N. Y.—p. 935.

Intraperitoneal Transfusion in von Jaksch's Anemia.—Grulee reports twelve cases of von Jaksch's anemia, in which he made intraperitoneal injections of citrated blood in greater or smaller quantities. Judging from the results, there seems to be an age element which is a determining factor in von Jaksch's anemia. The younger children, that is those under 2 years, do much better than do the older ones. Intraperitoneal transfusion gives the possibility of introducing large quantities of blood at short intervals without much difficulty. The results obtained show that the immediate amelioration is fairly constant and often quite marked. The ultimate results, in older children especially, are not nearly so happy.

Chronic Pancreatitis.—Hinton is certain that cases of chronic interstitial pancreatitis are not cured nor are subsequent attacks prevented by biliary drainage. The diagnosis should be made in a high percentage of cases from the history and clinical data, without an exploratory laparotomy. The infection seems to be a lymphangitis which spontaneously subsides after removal of the primary abdominal focus.

Northwest Medicine, Seattle, Wash.

25: 573-628 (Nov.) 1926

Lymphoblastoma. G. W. Holmes, Boston.—p. 573.
*Malignancy of Testis. G. E. Pfeiffer, Tacoma, Wash.—p. 578.
Outlook in Cancer. W. J. Mayo, Rochester, Minn.—p. 582.
Improvement of Poor Surgical Results. J. C. Lyman, Walla Walla, Wash.—p. 585.
*Carcinoma of Transverse Colon. H. D. Junkin, Idaho Falls.—p. 588.
Recent Advances in Physiology of Gastric and Pancreatic Secretion. A. C. Ivy, Chicago.—p. 589.
Causes for Failure in Treatment of Gastric Ulcer. J. H. Fitzgibbon, Portland, Ore.—p. 592.
*Clinical and Roentgenologic Findings in 332 Organic Gastric Lesions. M. F. Dwyer and J. M. Blackford, Seattle, Wash.—p. 595.
Origin of Bile Pigments and Colorless (White) Bile. W. J. Stater, Portland, Ore.—p. 599.
Colon: Most Abused Organ of Body. I. H. Moore, Seattle, Wash.—p. 601.
Abdominal Adhesions. H. J. Whitacre, Tacoma, Wash.—p. 608.
*Cardiac Pain. G. F. Strong, Vancouver, B. C.—p. 610.

Malignant Condition of Testis.—Four cases of malignant neoplasm of the testis are reported by Pfeiffer. Acute appendicitis was associated in one case. Conservative orchidectomy was done in all. Two cases have gone on to necropsy. One patient remains well four months after operation. In the fourth case the tumor was recently removed, and the patient exhibits some signs of metastases. Trauma distinctly figures in three cases; in the fourth there is no evidence of it. Extensive dental disease existed in at least three cases, causing speculation as to the influence of such foci. Specific urethritis was admitted in two cases. The age incidence was 35 in three cases, and 39 in the fourth case. The duration of symptoms before operation was six months in one case (epididymotomy was done two years previously for a swollen testis); five years in another, and two years in a third and fourth. Microscopic sections of three primary tumors and metastatic material from a fourth case revealed the characteristic cell structure and stroma which suggested classification in the third group of Ewing, that of embryonal malignant tumors. Thus, the theory of teratomatous relation of malignant testicular conditions is supported by the study of these four cases, all exhibiting carcinoma originating in a mesodermal organ.

Carcinoma of Transverse Colon.—Cancer of the transverse colon usually presents early signs of obstruction, but Junkin's patient had had little trouble with his bowels, and had continued his work up to the time of admission to the hospital. Very little distention had been noted, and no vomiting had occurred until the day before admission to the hospital. The youthfulness of the patient (aged 29) is quite unusual.

Analysis of Gastric Conditions.—The 332 diagnoses of organic gastric lesions reviewed by Dwyer and Blackford comprise 221 duodenal ulcers, sixty-six gastric cancers, forty-one gastric ulcers, two cases of gastric syphilis, one gastric sarcoma and one gastric hairball, making 14.3 per cent of the patients complaining of gastric symptoms. Extragastric conditions are by far the chief causes of stomach trouble. In 80 per cent of this series, the stomach was not the primary cause of the dyspepsia. Gallbladder disease is, in the opinion of the authors, the most common cause of stomach symptoms; 20.4 per cent of the entire series received such a diagnosis, equaling the total number of organic and functional diseases of the stomach and duodenum. Duodenal ulcer is the most frequent lesion of the stomach or duodenum causing gastric symptoms, and comprises 68 per cent of the organic gastroduodenal lesions, and 9.9 per cent of the total series. The average age of these patients was 41. Nearly 50 per cent stated that the onset of the gastric disturbance began before the age of 25, and in 25 per cent before the age of 20. In 80 per cent of duodenal ulcer cases, the so-styled typical history was obtained. Gastric ulcer was one fifth as common as duodenal ulcer, and occurs in relatively older people. Sixteen per cent of gastric ulcers were located on the posterior wall. The authors suggest that every patient past 40 who complains of stomach trouble, especially if the digestive disturbances occur in a previously healthy man, should have careful roentgen-ray examination to diagnose or exclude early cancer. A carefully obtained clinical history is of the greatest importance in the differential diagnosis of general gastric symptoms.

Cause of Cardiac Pain.—Strong summarizes his discussion as follows: There are four conditions in which pain arises from the heart: simple fatigue, irritable heart, angina pectoris and coronary thrombosis. The important factors in the production of this pain are exhaustion of the heart muscle and increased excitability of the nervous system. The afferent pathways by which these impulses are transmitted to the central nervous system are not yet clearly defined, although afferent fibers undoubtedly accompany both the vagus and sympathetic efferent nerves. It must be admitted that at present no satisfactory explanation can be given of the beneficial effect of cervical sympathectomy in cases of angina, and no such explanation is likely until more is known of the cause of the pain and the innervation of the heart and aorta.

Ohio State Medical Journal, Columbus

22: 914-1000 (Nov.) 1926

Medical Diathermy. F. B. Granger, Boston.—p. 933.
Tubercular Iridocyclitis as Observed with Slit Lamp. C. King, Cincinnati.—p. 939.
Interpretation of Fetal Heart Sounds During Labor in Relation to Fetal Mortality. J. P. Gardiner, Toledo.—p. 945.
Two Years' Experience with Malarial Treatment of General Paralysis. A. G. Hyde, Massillon.—p. 947.
Safety of Hysterectomy. E. H. Chapin, Columbus.—p. 950.
Light in Industries. P. W. Cobb, Cleveland.—p. 952.
Perforating Stab Wound of Kidney with Nephrectomy. H. A. McKnight, Springfield.—p. 957.

Oklahoma State Medical Association Journal, Muskogee

19: 286-314 (Nov.) 1926

Systemic Diseases of Focal Origin; Dental Causes. W. W. Rucks, Oklahoma City.—p. 286.
Focal Infection in Relation to Systemic Disease. F. J. Reichmann, Oklahoma City.—p. 288.
Focal Infections in Nasal Sinuses. J. C. Braswell, Tulsa.—p. 292.
Relationship of Constitutional and Dental Diseases. I. E. McCarty, Tulsa.—p. 293.
Some Trail Blazers of Medicine. F. S. Clinton, Tulsa.—p. 297.
Diphtheria. C. W. Fisk, Kingfisher.—p. 301.

Physical Therapeutics, Baltimore

44: 581-620 (Nov.) 1926

Physical Therapeutics in Dermatology. C. D. Collins, Chicago.—p. 581.
Radium and Cancer of Cervix Uteri. F. d. Courmelles, Paris.—p. 584.
Portable Whirlpool Bath. N. E. Titus, New York.—p. 589.
Progress in Phototherapy. F. T. Woodbury, New York.—p. 593.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2: 1019-1122 (Nov.) 1926

Follow-Up Treatment of Discharged Tuberculous Patients. N. Barlow, Washington, D. C.—p. 1019.
*Treatment of Laryngeal Tuberculosis. H. van Horne, Livermore, Calif.—p. 1027.
Spontaneous Pneumothorax in Pulmonary Tuberculosis. J. H. Happel, Legion, Texas.—p. 1032.
National Statistics of Institutions for Insane, Feebleminded, Epileptic and Delinquent. H. M. Pollock, Albany, N. Y.—p. 1037.

Introduction to Study of Neuropsychiatric Problems Among Negroes. G. S. Moore, Tuskegee, Ala.—p. 1042.
Social Adjustment of Psychotic Patients. J. W. Brophy, Fargo, N. D. —p. 1046.
Relation of Nephritis to Arteriosclerosis. C. S. Robbins, Washington, D. C.—p. 1052.
Why Tonsillectomy? W. C. Worthington, Indianapolis.—p. 1056.
*Spinal Rigidity. Z. H. Winemiller, Denver, Colo.—p. 1064.
Outline for Psychiatric Social History. F. A. Foster, Los Angeles.—p. 1067.
Odontoma. F. J. Bailey, North Little Rock, Ark.—p. 1072.
Two Cases of Raynaud's Disease. V. A. Aimone, Washington, D. C. —p. 1075.
Arteriosclerosis. F. S. Sailisbury, Camp Custer, Mich.—p. 1082.
Tuberculosis in U. S. Veterans' Bureau. T. H. T. Wright, Palo Alto, Calif., and L. H. Prince, Washington, D. C.—p. 1095.
Endo-Arteritis Obliterans, with Gangrene of Both Feet Treated by Physiotherapy. W. M. Tucker, Philadelphia.—p. 1104.

Treatment of Laryngeal Tuberculosis.—Van Horne is convinced that tuberculosis of the larynx can be benefited by positive therapy directly centered on the larynx itself. General systemic treatment should not be depended on wholly. However slight the laryngeal involvement may be, absolute voice rest—that is, silence—must be insisted on from the beginning and constantly observed. Whispering is of little value. Secondary therapeutic measures may be used as adjuncts to voice rest, but are of no value without it. These are cleansing sprays, topical applications, electrocautery and heliotherapy. The adjunct treatment of choice is heliotherapy. This is of great value only if given under the proper conditions and with correct technic. The patient should not treat himself. The insolation should be in the hands of an experienced operator. Treatments should be given daily, the dosage being gradually increased to a maximum. The direct rays of the sun are vastly superior to the ultraviolet ray or the water-cooled quartz lamp.

Spinal Rigidity.—Two cases are presented by Winemiller with a view of showing the healed and the active case. They are very typical of ostearthritis of the Marie-Strümpell type, and all of the cardinal symptoms of that disease were present in these two cases. In neither case was there any history of tuberculosis nor was anything demonstrable by the use of the roentgen ray that showed that there had ever been any tuberculous osteomyelitis present. Winemiller believes that these cases are secondary to some infection elsewhere in the body, and once the process is established in the vertebral column region, then that locality becomes the infectious agent, and although all other foci of infection may be removed the condition still remains. It progressively gets worse, and the patient is totally disabled until complete ankylosis of the spine occurs.

Wisconsin Medical Journal, Milwaukee

25: 531-582 (Nov.) 1926

Challenge to Medical Statesmanship. G. Frank, Madison.—p. 531.
Some Remedies; Good, Bad and Indifferent. B. Fantus, Chicago.—p. 536.
Periodic Health Examinations. J. A. Capps, Chicago.—p. 541.
Bronchography Following "Passive" Introduction of Contrast Medium into Tracheobronchial Tree. A. Ochsner, Madison.—p. 544.
*Sauerkraut in Treatment of Vomiting. W. S. Middleton, Madison.—p. 554.
Plan for Health Organization in Communities Without Full-Time Health Department. W. W. Bauer, Racine.—p. 556.
Lumbar Spine Injuries. C. A. H. Fortier, Milwaukee.—p. 558.
Pulmonary Gangrene, Terminal Stage. I. Josefsberg, Milwaukee.—p. 561.

Sauerkraut in Treatment of Vomiting.—Middleton asserts that sauerkraut affords a useful addition to the medical armamentarium in treating vomiting occurring in persons professing an antecedent taste for the preparation. In several cases of hyperemesis gravidarum, surprising relief followed the ingestion of sauerkraut. Vomiting subsequent to paracentesis abdominis, in a patient suffering from tuberculous peritonitis, stopped after a small portion of sauerkraut was eaten. In all more than twenty instances of persistent vomiting, for the most part in cases of cardiac decompensation, have been successfully met by this apparently paradoxical measure. From the outset, the use of sauerkraut in this relation was purely empirical.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

7: 223-336 (Oct.) 1926

*Ultramicroscopic Viruses: I. Cell Inclusions Associated with Certain Ultramicroscopic Diseases. G. M. Findlay and R. J. Ludford.—p. 223.
*Id.: II. Cytology of Fowl-Pox. R. J. Ludford and G. M. Findlay. —p. 256.
*Reaction of Blood in Epilepsy: Colorimetric Methods of Estimating P_H of Plasma. J. Marrack and G. Thacker.—p. 265.
*Effect of Variations of Salt Content of Blood on Its Bactericidal Power. A. Fleming.—p. 274.
Method of Removing Leukocytes from Blood. A. Fleming.—p. 281.
*Study of Streptococci from Scarlatina, Erysipelas and Puerperal Fever. G. H. Eagles.—p. 286.
*Observations on Six Anomalous Bloods; Theory of Iso-Agglutination. S. C. Dyke.—p. 294.
*Insulin in Normal and Cancerous Tissues. W. Cramer, F. Dickens and E. C. Dodds.—p. 299.
*Phosphate and Calcium Mechanisms in Skeletal Muscle After Parathyroidectomy. J. S. Loughridge.—p. 302.
*Susceptibility of Infective Agent of Rous Chicken Sarcoma to Action of Ultraviolet Rays. S. L. Baker and P. R. Peacock.—p. 310.
*Rôle of Reticulo-Endothelial System in Regulation of Number of Platelets in Circulation. S. P. Bedson.—p. 317.
*Pathologic Effects of Hypnotic Drugs on Central Nervous System of Animals. F. W. Mott, D. L. Woodhouse and F. A. Pickworth.—p. 325.

Ultramicroscopic Viruses; Cell Inclusions.—Findlay and Ludford review in pictographic form the voluminous literature already existing on the intracellular inclusions associated with twenty-two diseases due to ultramicroscopic viruses. They are: variola and vaccinia, sheep-pox, fowl-pox, scarlet fever, molluscum contagiosum, trachoma, rabies, distemper, varicella, herpes, meningo-encephalomyelitis of horses, virus III infection of rabbits, paravaccinia, infections of unknown etiology, virus from guinea-pigs, foot and mouth disease, warts, polyhedral and other ultravirus diseases of insects, fowl plague, swine fever, African horse sickness and a disease of fowls.

Virus of Fowl-Pox; Vaccinia.—Fowl-pox has also been described as epithelioma contagiosum and molluscum. Ludford and Findlay contend that both these terms must be regarded as misnomers, for the disease has nothing in common either with the epitheliomata or with molluscum contagiosum in man. On the other hand, there is considerable evidence to show that the virus of fowl-pox, if not identical, is at least related to the virus of vaccinia. From the cytologic point of view, interest has largely centered in the curious cell inclusions found in the infected epidermal cells in this disease. They were first described as gregarine parasites, and since then have been the subject of many investigations. Up to the present, however, attempts to study the origin and nature of these inclusions by modern cytologic methods have not been made. The strain of virus used in the present investigation was obtained from a spontaneous epidemic of fowl-pox, which occurred on a large poultry farm. The virus has been maintained for more than a year, under laboratory conditions, on the scarified skin of chickens from 1 to 2 weeks old, a fresh passage having been made every ten to fourteen days.

Reaction of Blood in Epilepsy.—The hydrogen ion concentration of the venous blood of epileptic patients has been found by Marrack and Thacker to lie within the normal range.

Salt Content of Blood Regulates Bactericidal Power.—It is shown by Fleming that leukocytes only function efficiently within certain limits of salt concentration, and that when the salt content falls below or rises above these limits, the leukocytes do not emigrate and do not phagocytose or destroy bacteria. It is shown also that when a large amount of salt is injected into an animal, so that the salt content of the blood is materially raised, the normal bactericidal power is temporarily lost, but after a few hours it is greatly enhanced. When smaller doses are injected, the preliminary fall in the bactericidal power is avoided, but the subsequent rise is marked, and in man, the injection of an amount of salt so little that when diluted with the blood it would only increase the salt content by 0.01 per cent, causes after three hours a great rise in the bactericidal power of the blood. So far,

the experiments have thrown little light on the reason for this astonishing rise in the bactericidal power, but it is hoped that further work may be more profitable in this direction. The intravenous injection of hypertonic salt solution has been used in cholera and other diseases, with a view to increasing the blood volume, but the results detailed by Fleming show that such injections may produce benefit, not only by virtue of their fluid content, but also by conferring on the patient's blood greater powers of destroying the infecting bacteria.

Study of Hemolytic Streptococci.—Eagles has shown that all strains of hemolytic streptococci from scarlet fever produce toxic filtrates, as judged by intracutaneous tests. A large number of strains from erysipelas, puerperal fever and from various other pathologic conditions produce a similar toxic filtrate. All toxic filtrates, regardless of their source, are neutralized by scarlet fever horse serum. Results obtained when immune rabbit serums from various toxin producing strains are used for neutralization may indicate, however, higher specificity. By agglutination, three main groups are shown to exist among hemolytic streptococci. The scarlet fever and erysipelas groups are confirmed, and a similar grouping is shown among strains from puerperal fever. Toxin production and agglutination by scarlet fever immune serums are not closely related when strains from a variety of pathologic sources are studied.

Blood Grouping.—The observations made by Dyke point to the conclusion that in the absence of absorption tests, many bloods of group I will escape detection. This fact is of importance (1) in that it offers an explanation of the apparent rarity of bloods of group I; (2) in its bearing on the matching of bloods for transfusion, and (3) in its medicolegal applications.

Insulin in Normal But Not Cancer Tissue.—Insulin is present in normal tissues in appreciable amounts. Cramer, Dickens and Dodds state that it is absent from malignant new growths. The cells of normal tissues oxidize glucose, the cells of malignant new growths split glucose, as Warburg found, with the formation of lactic acid. This parallelism suggests that the oxidation of glucose by the cells is dependent on the presence of insulin at the site of oxidation.

Phosphate and Calcium Mechanism of Muscle After Parathyroidectomy.—The alterations in the hexose-phosphate mechanism in tetania parathyropriva are said by Loughridge to be secondary to the fatigue produced by the increased muscular movements occurring in this condition. The calcium content of the muscle is lowered in tetany, following parathyroidectomy.

Effect of Ultraviolet Ray on Rous Sarcoma.—A technic for obtaining quantitative lethal effects on organisms with ultraviolet radiation is described by Baker and Peacock. It is shown that the various types of bacteria tested were equally susceptible to irradiation. A comparison is made between the lethal effects of the rays on ordinary bacteria and on the active agent in the Rous chicken sarcoma, and it is shown that the latter is much less susceptible. It is suggested that the relative insusceptibility of the agent in the tumor filtrates is due to its small size.

Reticulo-Endothelial System and Blood Platelets.—The temporary upset in function of the reticulo-endothelial cells produced by filling them with carbon particles, Bedson avers, is associated with a considerable increase in the number of platelets in the circulation. Removal of the spleen when blockade of the reticulo-endothelial system is at its height of functional activity is not productive of any further rise in the platelet count. The spleen would appear to regulate the number of platelets in the circulation by means of its reticulo-endothelial cells. In view of the essentially phagocytic nature of these cells, it seems reasonable to suppose that they take up and destroy the platelets which are not any longer of use. When the spleen is removed, this function is taken on by some other portion of the reticulo-endothelial system.

Effect of Hypnotic Drugs on Nervous System.—The animals used by Mott et al. were cats and monkeys. The drugs administered belong to two groups, the sulphone and the barbitone. The drugs were given by mouth. When these hypnotic drugs were administered over a period of seven or more days, numerous masses of a peculiar mucinoid material, from 5 to 60 microns in diameter, are found distributed throughout the central nervous system. Normal control tissue gives complete absence of this material. The fixed material in its staining reactions shows properties somewhat similar to amyloid. Chromatolysis, loss of Nissl substance and signs of cell degeneration are present in the nerve cells of the cerebellum, midbrain and spinal cord after intensive treatment with any of the hypnotic drugs. The cell degeneration is accompanied by the appearance of numbers of phagocytic cells, which appear to digest the nerve cells.

British Journal of Surgery, Bristol

14: 202-384 (Oct.) 1926

*Atrophic Disease of Shoulder Joint. J. P. Ross.—p. 206.
*Intracerebral Calcification. J. J. Levin.—p. 215.
*Myeloma and Cavities in Bone. R. P. Rowlands.—p. 224.
*Urinary Calculi Composed of Bacteria. R. O. Ward.—p. 230.
Tuberculosis of Male Breast: Case. R. H. J. Swan and H. J. B. Fry.—p. 234.
*Sprengel's Deformity with Paraplegia. M. Critchley.—p. 243.
Radical Operation for Urethral Stricture. R. H. Russell.—p. 250.
*Syphilitic Arthritis. A. H. Todd.—p. 260.
*So-Called Branchiogenetic Carcinoma. R. V. Hudson.—p. 280.
*Importance of Toxemia Due to Anaerobic Organisms in Intestinal Obstruction and Peritonitis. B. W. Williams.—p. 295.
Bony Tumor of Breast. S. C. Dyke.—p. 323.
Extraperitoneal Closure of Artificial Anus (Greig Smith's Method). T. Carwardine.—p. 329.
*Sarcomatous Permeation of Inferior Vena Cava and Right Side of Heart. H. J. B. Fry and C. E. Shattock.—p. 337.
Surgery of Jejunum. J. E. Adams.—p. 343.
*Preauricular Fistula. F. A. R. Stammers.—p. 359.
Fracture of Fibula Without Symptoms. S. Smith.—p. 364.
*Case of Cervical Dislocation and Paraplegia with Recovery. G. L. Alexander and H. J. Seddon.—p. 365.
*Case of Splenic Anemia: Rare and Fatal Complication of Splenectomy. G. F. Walker.—p. 367.
Aneurysm of Abdominal Aorta: Diagnosis by Lateral Radiograph of Spine. J. F. Brailsford.—p. 369.
Papilloma of Renal Pelvis Diagnosed by Pyelography. G. Keynes.—p. 372.
Ossifying Hematoma of Femur Following Contusion. J. Riddel and W. C. Wilson.—p. 374.

Atrophic Disease of Shoulder Joint.—Ross reports a case of neuropathic arthropathy of the shoulder joint in a woman, aged 45, of ten years' duration with gross deformity for three years before signs of disease of the nervous system were discovered.

Intracerebral Calcification.—In both the cases cited by Levin, a history of trauma was given. In the first case, a calcified mass was removed from the temporoparietal region; in the second case, the mass was situated in the right cerebral hemisphere, as shown by roentgen-ray examination, but was not removed as there seemed not to be any justification for removal. The first patient was greatly improved.

Treatment of Myeloma.—Rowlands advocates shelling out the tumor rather than amputating the limb. He cites five cases.

Urinary Calculi Composed of Bacteria.—Ward describes a case of a rather rare variety of soft kidney stones; namely, those which are composed entirely of bacteria. Nearly 100 soft stones were passed. The bacteria were easily demonstrated.

Sprengel's Deformity with Paraplegia.—The coexistence of a paraplegia with Sprengel's deformity rendered the case reported by Critchley unique. The causation of the paraplegia was not clear. Other bony defects were present in the cervicothoracic region.

Syphilitic Arthritis.—Todd urges that a joint puncture, with a Wassermann test and a cytologic examination of the fluid, and a Wassermann test of the blood, should be done as a routine in every case of arthritis of every kind, because syphilitic arthritis is not nearly as uncommon as it is commonly thought to be.

Branchiogenetic Carcinoma.—Hudson reviews six cases of apparent primary carcinoma of the neck. Two of the patients were miners and four were grooms, all men who had worked with horses all their lives. The curious occupational similarity was so striking that a search was made by Hudson in the hospital cancer and surgical register for further evidence

of cases giving a similar clinical history, and a corresponding anatomic site of growth. Three cases were found; one occurred in an elderly miner, one in a young carter, and the third in a man who had worked with horses all his life, but who, prior to his death, was occupied as an engineer.

Anaerobic Bacteria Toxemia in Intestinal Obstruction.—The hypothesis is advanced by Williams that the toxemia in cases of intestinal obstruction, whether organic or secondary to peritonitis, results, in part at least, from the absorption of the toxin of *Bacillus welchii*, due to the proliferation of this anaerobe in the stagnant contents of the small intestine. Evidence is given of the presence of *Bacillus welchii* toxin in the small intestine in intestinal obstruction and peritonitis in human subjects, and in these diseases experimentally produced in dogs. The toxin was not found in normal small intestine contents, or in contents of the large intestine even when obstructed, in human subjects. A therapeutic test of the hypothesis by the administration of *Bacillus welchii* antitoxin in a series of cases of appendicular peritonitis and acute intestinal obstruction was made, and improvement in the general mortality rate was noted.

Sarcomatous Permeation of Vena Cava and of Heart.—The case of intravascular sarcomatous growth reported by Fry and Shattock is unique. The growth entered the inferior vena cava at its origin from the common iliac veins, traversed its whole length, forming a solid cast of the vessel, went through the right auricle and orifice of the tricuspid valve and the cavity of the right ventricle, and passed out through the pulmonary valve into the pulmonary artery as a solid cord. Portions here became detached and formed emboli in the lungs. The length of the growth within the vascular system as a solid mass was not less than 53 cm., with an average diameter of 5.5 cm. This extraordinary growth formation must have been in existence for some months prior to death, yet it did not cause very severe vascular symptoms, apart from edema of the lower part of the body, in spite of the almost complete blocking of the inferior vena cava and right side of the heart, permitting the passage of only a thin peripheral layer of blood.

Preauricular Fistula.—Stammers records six cases of preauricular fistula which illustrate well the familial and hereditary features of this condition. They were all situated in the root of the helix. The six cases came from two different families. Two of these fistulas had undergone occlusion of the opening with subsequent suppuration. These fistulas are not remnants of the first branchial cleft, but result from aberrant coalescence of the six tubercles which are destined to form the pinna.

Old Cervical Dislocation and Paraplegia.—A boy, aged 16, who was being treated by Alexander and Seddon for multiple infective arthritis, on several occasions complained of stiffness in the neck. A protuberance in the midline of the neck behind, with a depression above, was observed. A roentgenogram showed that there had been a forward dislocation of the atlas on the axis, with probably a fracture of the odontoid process, but the latter was not visible. Symptoms or signs of compression of the spinal cord were not present. Careful inquiry failed to elicit any history of injury other than: (1) a severe blow in the mouth with a cricket bat at the age of 10. The boy states that his neck had been stiff ever since. (2) On regaining consciousness after an anesthetic for the removal of several teeth, he found his head hanging over the end of the table.

Splenic Anemia, Splenectomy; Death from Hematemesis.—Walker's patient, aged 23, complained of three days' abdominal pain, mostly colic, in the left lower quadrant, together with abdominal aching and distention, vomiting, and one brisk hematemesis. After examination, a diagnosis of splenic anemia was made. At laparotomy, several exceedingly large veins were encountered in the neighborhood of the umbilicus. This was the first indication of the unusually great strain on the collateral circulation betwen the portal and systemic systems. A further indication of this strain was the discovery that the spleen could not be delivered into the wound because of an extensive plexus of very large veins passing from the posterior abdominal wall to the spleen. The spleen was removed nevertheless. The patient did not lose much blood, except that contained in the greatly enlarged organ. A few hours after the closure of the abdomen, the patient suddenly had a huge hematemesis and fell back dead. The cause of the hematemesis was a rupture of an esophageal vein.

Medical Journal of Australia, Sydney

2: 539-572 (Oct. 23) 1926

Prevention of Tuberculosis. F. S. Hone.—p. 539.
Specific Treatment of Pulmonary Tuberculosis. H. W. Wunderly.—p. 543.
Surgical Aspects of Tuberculosis. H. S. Newland.—p. 551.
Manic-Depressive Psychosis. S. Ellery.—p. 553.
Splint for Treatment of Wide Depressed Nasal Bridges. A. B. K. Watkins.—p. 556.
*Case of Intestinal Obstruction. W. R. Griffiths.—p. 557.

Intestinal Obstruction Caused by Orange.—In the case reported by Griffiths, the cause of the obstruction was nearly half of a small orange with the rind intact. This had become folded to form a sausage shaped mass. One end had become impacted in a short Meckel's diverticulum, causing the main mass to swing round like a gate closing the lumen of the bowel.

Okayama Medical Journal, Okayama, Japan

1055-1158 (Oct. 31) 1926

Cushion-Like Thickening of Intima of Renal Arteries. T. Sato.—p. 1055.
Resorption of Bile Acids in Gallbladder; Significance of Bile Acids. T. Hosokawa.—p. 1061.
New Silver Impregnation Method for Demonstration of So-Called Intracellular Cement. T. Kuwahara.—p. 1070.
Spleen and Carbohydrate Metabolism: IV. Grape Sugar Excretion in Urine. A. Noma.—p. 1095.
Comparative Investigations of Noxiousness of Morphine Group Irrespective of Their Tetanic Action. R. Katagi.—p. 1117.
Effect on Vessels of Thebaine, Its Derivatives and Related Substances. M. Yamauchi.—p. 1133.
Hematochyluria Beginning as Fibrinuria. T. Yamamoto.—p. 1143.

Tubercle, London

8: 1-48 (Oct.) 1926

*Ultraviolet Ray Treatment in Tuberculosis. J. Crocket.—p. 1.
*Significance of General Light Baths with Quartz Lamp in Treatment of Tubercular Lymphomata. A. v. Bonsdorff.—p. 13.
Lipiodol as Aid to Diagnosis in Intrathoracic Disease L. S. T. Burrell and S. Melville.—p. 19.

Ultraviolet Ray Treatment in Tuberculosis.—In tuberculosis, artificial light treatment is, in Crocket's experience, beneficial in adenitis, skin lesions, laryngeal disease, tuberculous peritonitis, pleuritic conditions, pyopneumothorax, bone and joint tuberculosis, and certain cases of pulmonary disease. He points out, however, that light treatment cannot of itself cure tuberculosis in any form. It cannot take the place of rest and immobilization in surgical cases. It cannot be a substitute for sanatorium measures in pulmonary or abdominal disease. It is simply an adjuvant which has a beneficial germicidal and hyperemic effect on superficial lesions, and in all conditions is a means of making the patient stronger and more resistant to infection. It is one of many adjuvants which can be utilized to enable the patient to put up a more effective fight against tuberculosis. Like tuberculin, sunlight has no immunizing effects with those who have not been infected with the tubercle bacillus. The native races of Australia, America and Africa, in spite of abundant sunlight, go down readily with the infection when they encounter it for the first time. Like tuberculin also, it should never be prescribed carelessly or given indiscriminately, but always under medical supervision, the effects being controlled by radiologic and serologic investigations, a close watch being kept for those indications that point to the limit of tolerance being overstepped and that call for a halt.

Light Baths in Treatment of Tuberculous Glands.—In fourteen cases of gland tuberculosis that were treated by Bonsdorff by radiation with therapeutic lamps, a more or less complete reduction of the lymphomata was effected. When the glands had broken, fistulas and ulcers were healed. The general health of the patients improved and they gained in weight. Bonsdorff has come to the conclusion that in Finland, where sunlight is rare, general light baths with therapeutic lamps provide a good, if not a complete, substitute for the sun cure in the Alps and in sunnier countries, and are a valuable help in the treatment of tuberculosis.

Archives d'Ophtalmologie, Paris

43: 513-576 (Sept.) 1926

The Purkinje-Sanson Images. Marquez.—p. 513.
*By-Effects of Artificial Serum. Van Lint.—p. 522.
Case of Syphilitic Tarsitis. H. Le Roux.—p. 530.
Traumatic Detachment of Retina. J. Gallois.—p. 532.
Traumatic Rupture and Plication of Cornea. V. Reis.—p. 544.
Accommodation of Retina and Mechanism of Vision. H. Chabrun.—p. 551.

By-Effects of Artificial Serum Injected into the Eye.—In Van Lint's three cases, sodium chloride solution injected into the eye together with procaine hydrochloride caused swelling of the lower eyelid, cheek and temple. The swelling persisted for weeks or months; in one instance associated with slight redness and tenderness. Similar accidents were observed by Coppez on using sodium chloride solution of the same origin. The procaine hydrochloride could not be held responsible, since no untoward symptoms followed when it was injected alone. Van Lint recalls Vignes' observation, in which injection of artificial serum behind the mammary gland caused sloughing of the entire breast, also three similar cases reported by Lee and Adair. Neither chemical analysis of the sodium chloride solution nor animal experimentation with it revealed the cause of the complication.

Bulletin de l'Académie de Médecine, Paris

96: 197-222 (Nov. 9) 1926. Partial Index

Colon Bacillus Septicemia Complicating Gastric Ulcer. A. Maciag and J. Olbrycht.—p. 212.

96: 223-246 (Nov. 16) 1926. Partial Index

Phenyl Salicylate as Urinary Tract Antiseptic. P. Bazy.—p. 225.
International Tuberculosis Congress in Washington. L. Bernard.—p. 228.
*Septicemia from Friedländer's Bacillus. Brouardel.—p. 240.

Generalized Infections Caused by Friedländer's Bacillus.—Brouardel recently observed two cases of meningitis and three of septicemia, all produced by Friedländer's bacillus. The clinical picture was the same as in other septicemias. There was sometimes reduction of the number of leukocytes, sometimes increase, especially of the polymorphonuclear leukocytes. The nature of the infection was first revealed by blood cultures; the reactions of agglutination and of deviation of complement were futile. Treatment by vaccine prepared with the isolated bacillus was without avail; most of the patients died. Once the specific bacteriophage was isolated in a convalescent. The bacteriophage is not considered as a factor of recovery, but as an immunity reaction of the body fluids, comparable to agglutinins.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 1561-1575 (Nov. 12) 1926

*Ophthalmic Herpes and Sympathetic Syndrome of the Eye. P. Jacquet and M. Bariéty.—p. 1561.
Technic for Pneumography of the Brain. Sicard et al.—p. 1563.
Spontaneous Cure of Hydatid Cyst of Abdomen. M. Renaud and C. Juge.—p. 1564.
Poisoning by Wine Made from Grapes Treated with Arsenical Insecticides. E. Ledoux.—p. 1566.
Leishmaniasis in an Adult. H. Eschbach.—p. 1568.
Technic of Immunization with Tetanus Anatoxin. C. Zoeller and G. Ramon.—p. 1570.

Ophthalmic Herpes with Oculosympathetic Syndrome.—Jacquet and Bariéty report the history of a woman, aged 32, with ophthalmic herpes. There was a manifest anesthesia of the cornea. At the end of twenty days, the eruption disappeared, but the corneal anesthesia and meningeal reaction persisted. In the course of the disease a dissociated syndrome appeared, consisting in retraction of the eyeball and ptosis, without miosis. The syndrome became more evident on application of the atropine and physostigmine tests. Since the reaction was different in the two pupils, it is evident that the syndrome was due to paralysis of the sympathetic. The symptoms were gradually disappearing when the patient was discharged.

Comptes Rendus de la Société de Biologie, Paris

95: 1089-1136 (Nov. 5) 1926. Partial Index

*Azoturia and Azotemia in Children. E. Lesné and C. Richet, Jr.—p. 1090.
Has Lipiodol a Hydaticide Action? F. Dévé.—p. 1093.
*Skin Immunization Against Rabies. L. V. de Georges.—p. 1096.
*Skin Reactions from Tubercle Bacillus Filtrate. C. Mantoux and J. Paraf.—p. 1100.
*Ammonium Sulphate for Precipitation of Globulin. T. Geill.—pp. 1101 and 1105.
*Cultivation of Liver and Pancreas Tissue. O. Kapel.—p. 1108.
*Production of Antibodies Following Vaccination Against Whooping Cough. M. Kristensen and S. A. Larsen.—p. 1110.
Hyperthermia from Methylene Blue. C. Heymans and P. Regniers.—p. 1117.
*Globulin and Retraction of Clots. J. Roskam.—p. 1122.
Schern's Phenomenon in Trypanosomiasis. A. Dubois.—p. 1130.
Ergotamine Tartrate in Hyperthyroidism. A. K. Noyons and J. P. Bouckaert.—p. 1133.

Basal Azoturia and Basal Azotemia in Children.—Lesné and Richet found that in children from 4 to 9 years old the basal azoturia (minimum excretion of nitrogen) is lower than in adults. The oxidation of proteins per kilogram of body weight is only slightly higher than in adults. In children aged from 10 to 15 the basal azoturia is higher, and oxidation of proteins, calculated per kilogram of body weight, is twice as great as in adults. Therefore, the food of a child weighing 35 Kg. must contain as large an amount of protein substances as that of an adult weighing 70 Kg. Similar reasons lead to the conclusion that boys need more protein food than girls of the same age.

Local Immunization by the Skin Against Rabies.—Rabbits were injected with lethal doses of rabies virus subcutaneously or into the vein. They did not develop any reaction. Then they were inoculated beneath the dura mater. All the inoculated animals, as well as the controls, died from rabies. In thirty rabbits, rabid cerebral emulsion was rubbed into the shaved skin. About 50 per cent of the animals contracted rabies. The interval between inoculation and death was the same as with subdural inoculation. Of a total of fifteen rabbits first vaccinated by the skin, and then inoculated with lethal doses, ten survived. Besredka's method of local immunization may succeed in conferring immunity against rabies where other methods fail.

Skin Reactions Produced by Filtrate of Tubercle Bacilli.—Mantoux and Paraf compared in man and in animals the reactions from tubercle bacillus filtrates, boiled for half an hour, with those from tuberculin. The two substances were injected into the skin simultaneously, 1 cc. and 0.1 cc., respectively. The aspect of the papules and the time of their appearance and disappearance were analogous in both tests. In infants with a negative tuberculin reaction, the filtrate reaction was also negative. In infected infants or in adults with a positive tuberculin reaction, injection of the filtrate was followed the next day by the appearance of an erythematous papule.

Ammonium Sulphate for Separation of Globulin from Albumin in Serum and Urine.—Geill's research was based on Hofmeister's method of separation of globulin from albumin in the body fluids. This method consists in adding to the fluid an equal quantity of a saturated solution of ammonium sulphate. After the blood serum is diluted, Geill adds to it ammonium sulphate in gradually increasing concentration until there is precipitation. There was evidence that an iso-electric reaction (from 4.7 to 4.8 p_H) in the fluid examined is a better condition for precipitation than a neutral reaction (7.1 p_H). Precipitation at the iso-electric point occurs with a concentration of ammonium sulphate corresponding to 45 per cent of a saturated solution of the salt. The albumin-globulin (A/G) quotient proved to be from 1.5 to 1.0 in the serum. The method was used for precipitation of globulin in the urine of patients with various kidney diseases. In two cases of amyloid kidney, the elimination of globulin was considerable; in one, the protein quotient was 0.9, in the other, 3.3. On the other hand, in nephrosis and chronic nephritis, the urine contained more albumin than globulin. In one case the protein quotient was 23.0; i. e., there was twenty-three times as much albumin as globulin.

Cultivation of Liver and Pancreas Tissue in Vitro.—Kapel employed Carrel's method (plasma plus juice of embryonal tissue) for the cultivation of fowl's liver and pancreas. The liver was removed from chicken embryos, aged from 9 to 15 days. He found it possible to conserve the tissue through twenty-four passages made within two months. The morphologic aspect of the cultures was similar to that of cultures of Rous

sarcoma. Pancreatic tissue of fowl embryos, aged from 16 to 19 days, was conserved through fifteen passages, within one month.

Production of Antibodies Following Vaccination Against Whooping Cough.—The vaccine used was prepared with Bordet-Gengou bacilli, 1 cc. of which contained 10,000 millions of the bacilli. Gradually increasing doses of the vaccine, from 0.1 to 1.1 cc., were given in three or five intramuscular injections. After the vaccination, the reaction of fixation of complement revealed the presence of antibodies. Their appearance was earlier than in natural whooping-cough infection.

Blood Platelets, Globulin and Retraction of Clots.—Roskam asserts from his research on rabbit's plasma that retraction of fibrinous clots is not connected with the amount of intact platelets in the serum. The phenomenon depends essentially on the properties of the fibrin. The retractility of the latter is increased when there are numerous and physiologically normal globulins in the coagulating fluid.

Journal de Physiol. et de Path. Gén., Paris

24: 475-700 (Sept.) 1926

Anomalies of Color Vision. M. Tscherning and H. Larsen.—p. 475.
*Duality of Muscular Sense. L. Bard.—p. 483.
Color Vision. M. Tscherning and H. Larsen.—p. 492.
Physiology of Lactic Acid of the Blood. J. A. Collazo and E. Morelli. —p. 508.
Action of Rubidium on Auricular Fibrillation. A. H. Roffo and R. Lopez-Ramirez.—p. 519.
*Uricemia and Nucleoprotein Metabolism. L. Garot.—pp. 525 and 556.
Peripheral Circulation in Man. D. Danielopolu et al.—p. 541.

Duality of the Muscular Sense.—Correct performance of movement depends on a double mechanism of regulation. One part is connected with the centripetal irritation of tendon sensibility, which controls the mechanical effect of muscle contractions. It influences the cerebral centers. The other is connected with the centripetal irritation of the myofibril sensibility, which controls the dynamic effects, the various phenomena of motion sickness, also the coordination of two antagonistic muscular groups acting simultaneously. It influences the cerebellar centers. Tabetic ataxia is the result of pathologic suppression of tendon sensibility, while cerebellar ataxia is caused by suppression of the myofibrillar sensibility. The physiologic duality of the muscular sense explains the corresponding duality in disturbances of motion regulation.

Uricemia and Metabolism of Nucleoproteins.—Garot's conclusions are based on his experiments on dogs. The disintegration products of splenic and intestinal purines are carried by the portal blood into the liver, whence they are eliminated with the bile. A part of the uric acid is retained in the hepatic parenchyma. This uricopexic function of the liver is a permanent one, and has to do with both the endogenous and exogenous purine derivatives. It is enhanced by digestion or by increased intake of purines. The elimination of uric acid with the bile parallels the intensity of metabolism of exogenous nucleoproteins.

Lyon Chirurgical

23: 549-680 (Sept.-Oct.) 1926

Influence of the Sympathetic on the Circulatory System of the Uterus. L. Michon and H. Quincieu.—p. 549.
*Fasting as a Factor in Malarial Recurrence. G. Bolognesi.—p. 563.
Two Cases of Mesenteric Cyst. M. Cornioley.—p. 566.

Fasting as Etiologic Factor in Recurrence of Malarial Infection.—A woman was admitted to hospital three days after having swallowed a dental plate during sleep. The day after admission the plate was removed, without great harm to the esophagus. The patient was not allowed to take food for a few days in order to avert perforation of the small esophageal ulcerations. She was discharged with normal temperature and in satisfactory condition. Two days later, namely, on the eighth day after the accident, and after an eight day fast, the patient developed malarial infection of the pernicious form, with edema of the neck and thorax. She died with symptoms of asphyxia during a paroxysm. Signs of perforation of the esophagus were absent. Investigation disclosed that the woman had suffered from malaria eight years before, since which time she had not had a recurrence. The prolonged, complete fast may have provoked the recurrence, which occasioned sloughing of the injured esophageal mucosa and secondary septic lesions of the cellular tissue of the neck and mediastinum. Bolognesi intends to make clinical and experimental researches on the mechanism of necrotic complications following operations on patients with malaria.

Presse Médicale, Paris

34: 1473-1488 (Nov. 24) 1926

Protection of Ovaries During Exposure of Uterus to Roentgen Rays. T. Tuffier.—p. 1473.
*Respiratory Changes in Dementia Praecox. R. Mignot and A. le Grand. —p. 1474.
*Theory of Mechanism of Adams-Stokes Syndrome. I. Mahaim.—p. 1476.

Respiratory Disturbances in Dementia Praecox.—In patients with dementia praecox, Mignot and le Grand found a reduction in the number and in the amplitude of the respiratory movements, besides expiratory pauses, each of from three to seven seconds' duration. Evidently pulmonary ventilation is decreased in this form of insanity. The respiratory curve resembles that of animals after bilateral vagotomy. This suggests that impairment or abolishment of the excitability of the vagus may be responsible for the respiratory disturbance.

Theory of Mechanism in Adams-Stokes Syndrome.—Mahaim observed two cases of ventricular tachycardia with malignant endocarditis and one case with gangrenous bronchiectasis and progressive insufficiency of the heart. Histologic examination showed ulcerative destruction or inflammatory infiltration of Tawara's node and of the bundle of His. These lesions, the author says, and not obstruction of the artery of His' bundle, induced the dissociation of auriculoventricular conduction and ventricular tachycardia.

34: 1489-1504 (Nov. 27) 1926

*Pathogenesis of Pulmonary Edema. L. Bard.—p. 1489.
Mechanism of Thrill in Arteriovenous Aneurysm. R. Leriche and E. Stulz.—p. 1491.
Respective Sites of Uterus, Fetus and Placenta. C. Fournier.—p. 1491.
Therapeutic Abortion in Tuberculous Women. E. Sergent.—p. 1492.
Treatment of Pancreatic Fistulas. J. Sénèque.—p. 1492.
Medicine and Philosophy. P. Desfosses.—p. 1499.

Nature and Mechanism of Acute Edema of the Lung.—Bard gives a detailed exposition of his theory concerning the mechanism of acute edema of the lung. The edema is explained by association of an active dilatation of the pulmonary arteries and sudden deficiency of the left heart, with consequent hyperactivity of the right heart. Either the vascular dilatation or the cardiac deficiency may occur first, the other appearing secondarily by reflex action. The pathologic phenomena observed point to paroxysmal changes in intracardiac reflexes, in which the sympathetic is involved. Venesection is a valuable measure; the amount of blood withdrawn is less important than the speed with which it is allowed to escape. The more rapid the flow, the sooner the equilibrium of the intracardiac reflexes will be restored. Morphine also acts on the intracardiac reflexes. Treatment with shock or with preparations influencing the sympathetic is a matter of the future.

Schweizerische medizinische Wochenschrift, Basel

56: 993-1016 (Oct. 16) 1926

Clinical Pathology of Internal Secretion. A. Oswald.—p. 993.
Histology and Bacteriology of Exhumed Corpses. F. Schwarz.—p. 996.
Leukoplakia of Urinary Passages. R. Allemann.—p. 998.
Otology in North America. F. R. Nager.—p. 1005.
Radioactive Serums in Cancer. R. Fischer.—p. 1008.
*Undiagnosed Appendicitis. A. Christ.—p. 1009.

Undiagnosed Appendicitis.—Christ publishes three cases of appendicitis with onset from two to fourteen days after a contusion of the abdomen. The history misled experienced diagnosticians, who suspected only direct sequelae of the injury.

Pediatria, Naples

34: 1097-1152 (Oct. 15) 1926

*Syphilitic Pleurisy. G. Macciotta.—p. 1097.
Utraviolet Rays in Tetany. M. Miraglia.—p. 1116.
Intestinal Parasites in Children. F. Papandrea.—p. 1125.
Blood Picture in Tuberculosis. D. Angarano.—p. 1128.
Migraine in Children. E. Morabito.—p. 1139.

Syphilitic Pleurisy.—Macciotta reports two cases of pleurisy in infants with congenital syphilis. He thinks that some cases of pleurisy which resist ordinary treatment are of syphilitic origin and should be treated accordingly before the anatomic changes become irreparable.

Policlinico, Rome

33: 1453-1487 (Oct. 18) 1926

Oscillation of Pupils After Light Reflex. A. Santamaria.—p. 1453.
Spinal Anesthesia with Tutocain. P. Valdoni.—p. 1456.
Phenobarbital-Ether Anesthesia. G. Millul.—p. 1459.
*Nicotine Poisoning and Gastro-Intestinal Disturbances. S. Corinaldesi. —p. 1460.
Campaign Against Malaria. G. Bini.—p. 1464.

Nicotine Poisoning and Gastro-Intestinal Disturbances.—Corinaldesi reports the history of a heavy smoker who developed symptoms resembling ileus. Another man suffered from persistent diarrhea. Both recovered after they gave up smoking.

Riforma Medica, Naples

42: 985-1008 (Oct. 18) 1926

Traumatic Perihepatitis. G. Margreth.—p. 985.
Catalase and Blood Coagulation. C. Zatti and G. Miraglia.—p. 987.
Bismuth Treatment of Syphilis. B. Sparacio.—p. 989.
*Ureosecretory Coefficient. P. Stanganelli.—p. 993.
Ascoli's Simultaneous Bilateral Pneumothorax. Editorial.—p. 1003.
Syphilitic Enteritis. R. Niola.—p. 1004.

Ureosecretory Coefficient.—Stanganelli reviews all the recent objections made to the validity of Ambard's ureosecretory coefficient. He advises attaching more importance to the results of catheterization of the ureters. Nephrectomy is safe only if the other kidney is able to eliminate more than 0.75 Gm. of urea in two hours and if it excretes phenolsulphonphthalein well.

Archivos de Endocrinología y Nutrición, Madrid

4: 205-252 (Sept.-Oct.) 1926

*Clinical Value of Creatinine Determination in Nephritis. J. Cuatrecasas. —p. 205.
*The Induced Hyperglycemia Test. G. Peco and F. Puchulu.—p. 226.

Clinical Value of Creatinine Determination in Nephritis.—Using Folin's technic on twenty-four patients with nephritis and other diseases, Cuatrecasas made further investigations into variations in creatinine. The lowest readings were in nephritis (0.006 Gm.) and Parkinson's disease (0.008 and 0.01 Gm.). In nervous diseases the blood creatinine was usually low, although in a case of cerebellar hemorrhage it reached 0.033 and 0.05 Gm. The highest figures belonged to a case of syphilitic aortitis (0.05 Gm.). In five nephritis cases, the blood creatinine did not show a consistent increase. It also tended to vary in the same patient. Parallelism could not be established with the blood urea or the urea excretion, which seem to move within narrower limits. In nineteen out of thirty-six cases it proved impossible to determine the creatinine threshold, as the excess was higher than the creatinine content of the blood. Ambard's urea formula is not mathematically accurate, but as a working theory it has been helpful. Ambard himself realized its relative value: "Can such a complex phenomenon as the renal function be submitted to a quantitative examination?"

Blood Sugar in Normal Subjects.—In twenty-five normal persons studied by Peco and Puchulu, a dose of 2 Gm. of anhydrous glucose per kilogram of body weight caused neither increase in the blood sugar nor glycosuria within three hours. The fasting blood sugar reached an average of 0.88 Gm. per thousand cubic centimeters of blood, varying from 0.62 to 1.092 Gm. After three hours, the figures were 0.733, 0.588 and 1.01 Gm., respectively. The Folin-Wú method was used to determine the blood sugar.

Boletín de la Soc. de Cirugía de Chile, Santiago

4: 151-161 (Sept. 8 and 22) 1926

*Popliteal and Iliac Aneurysms. F. Opazo.—p. 151.
Megacolon After Sigmoidectomy for Volvulus. H. Grove et al.—p. 153.
Echinococcus Cyst of the Liver Resembling Common Duct Stone. J. Arnello.—p. 157.
Rare Fracture of the Os Calcis. F. Opazo.—p. 159.

Popliteal and Iliac Aneurysms.—Delbet's operation proved successful in two cases of popliteal aneurysm described by Opazo. The third case was more interesting, as the patient was recovering after the excision of a femoral aneurysm, when a new blood sac developed in the external iliac artery on the same side. It is possible that the two tumors coexisted, the larger one masking the presence of the smaller.

Boletín de la Soc. de Obstet. y Ginecol., Buenos Aires

5: 431-468 (Nov. 8) 1926

Obstructed Pelvis. J. A. Gabastou.—p. 440.
Primary Amenorrhea. A. Caviglia.—p. 446.
Standardization of Wassermann Test in Maternity Hospitals. M. L. Pérez.—p. 449.
Hypogastric Neurosis and Pelvic Varicocele. C. A. Castaño.—p. 454.
*Ovarian and Uterine Cancer. A. J. Bengolea and A. J. Pavlovsky.—p. 460.

Uterine Genesis of Ovarian Cancer.—Bengolea and Pavlovsky add two cases to the one previously reported, in which a presumably primary growth of the ovary turned out to be in all likelihood a metastasis of a uterine tumor. In both cases, the incidental removal of the uterus brought to light an unsuspected malignant condition. Metastasis from the ovary into the uterine mucous membrane is more improbable, as it would have to struggle against the lymph flow.

Crónica Médica, Lima

43: 185-208 (July) 1926

*Trichomonas Infection of the Bladder. E. Escomel.—p. 185.
Buccal Leukoplasia and Cancer of the Tongue. C. Villarán.—p. 189.

First Peruvian Case of Trichomoniasis of the Bladder.—After reporting cases of trichomonas infection in the intestine, vagina, teeth and liver in Peru, Escomel now describes the first case of the vesical type seen in his country. The patient was a woman, 60 years old, with diabetes. While the urine was loaded with live trichomonas, none could be found in the scanty vaginal discharge.

Medicina Ibera, Madrid

2: 471-498 (Nov. 27) 1926

Phlorhizin in the Diagnosis of Pregnancy. S. Ruiz Martinez.—p. 471.
*Primary Chancre in the Lacrimal Caruncle. C. San Antonio.—p. 474.

Primary Chancre in the Lacrimal Caruncle.—San Antonio quotes a case in which a girl, aged 5 years, was about to be operated on elsewhere for an obscure lesion of the eye. Careful examination and study disclosed a primary syphilitic lesion in the caruncle, with secondary manifestations in the glands and a typical rash. Both parents had syphilis. San Antonio had previously seen primary lesions on the eyelid and in the internal angle, but not in this location. Any attempted surgical removal might easily have proved fatal.

Prensa Médica Argentina, Buenos Aires

13: 485-516 (Oct. 30) 1926

*Action of Virus in the Etiology of Malignant Growths. A. H. Roffo and E. B. Barbará.—p. 485.
*Action of Epinephrine on Blood Glucose and Lymph Glucose. O. Pico Estrada and V. Deulofeu.—p. 499.
Haemoproteus in the Peripheral Blood of "Pheucticus Aureoventris." S. E. Parodi and F. L. Niño.—p. 502.
Neurofibrosarcoma of the Brachial Plexus. A. Ceballos and P. D. Curutchet.—p. 503.

Gye's Cancer Virus Theory Unconfirmed.—Roffo and Barbará describe in full the experiments carried on for nine months in the Institute of Experimental Medicine to confirm or disprove Gye's theory. Evidence of the alleged virus or of its infectiousness could not be found. Even after being treated with chloroform, the chicken sarcoma "virus" proved as infective as before. All attempts at growth failed, and, even more signally, efforts intended to bring out the presence of the two highly stressed factors; namely, the specific factor and the virus. Barnard used as an aerobic culture medium thin serum agar, while Gye mentions using only his special medium. As to Gye's observations on tumors in mammals, the transmissibility in Roffo and Barbará's experiment was governed exclusively by the survival of the cancer cell itself.

Action of Epinephrine on Glucose in Blood and Lymph.—The experiments on dogs conducted by Pico Estrada and

Deulofeu bear out the previous work of the authors, in the sense that the injection of epinephrine increases the quantity of glucose in the lymph as well as the amount of lymph itself. It seems possible that an analogous mechanism may control the variations of the amount of lymph, especially after fat ingestion.

13: 517-556 (Nov. 10) 1926

Laënnec. A. J. Heidenreich.—p. 517.
*Clinical and Roentgenologic Features of Small Pleural Effusions. A. J. Heidenreich.—p. 519.

Clinical and Roentgenologic Features of Small Pleural Effusions.—This entire issue is devoted to tributes to Laënnec. Heidenreich, in speaking before Sergent, who happened to be at Buenos Aires, took as his subject what he calls the "minute pleural effusion syndrome." Through roentgenograms and diagrams he tried to prove that there may exist very small effusions in the pleural cavity, lacking the usual symptoms. Roentgen rays prove a useful diagnostic aid in the lateral position. Whenever flatness is elicited at a base, a careful examination may bring to light the presence of a small area of empyema. Percussion and auscultation render valuable assistance in such cases.

Revista Médica de Barcelona

6: 169-224 (Oct.) 1926

Septicemias from Dental Infection. J. Aris.—p. 292.
Extrasystoles and Parasystoles. F. de A. Estapé.—p. 297.
Functions of the Pituitary and of the Infundibulohypothalamic Region. B. A. Houssay.—p. 328.
*Enormous Lumbar Hernia. R. J. Rosés et al.—p. 332.
Colitis and Nervous Disturbances. R. Savignac.—p. 338.
Radiography of Kidneys and Ureters. A. Torra Huberti and Figueras-Faixat.—p. 343. (C'td.)

Enormous Lumbar Hernia.—In a case described by Rosés et al. in a man, aged 57, a hernia in the left gluteal region has become as large as a watermelon, its greatest circumference measuring 105 cm. It is apparently congenital, having developed gradually. For four years borborygmus has been perceptible in its interior. The hernia is absolutely irreducible. The ring is formed by Putti's triangle. The sac contains the stomach, intestine and left kidney. The abnormal position of the various digestive organs is shown in illustrations. There are hardly any subjective or digestive symptoms. The Wassermann test proved strongly positive. The patient also suffers from moderate dyspnea after exercise and from aortic regurgitation and hyposystole. The hunger sensation is not located in the displaced stomach, but in the epigastrium. Treatment was aimed primarily at the syphilitic condition. Two punctures were performed, which relieved the discomfort from weight, and a suspensory has given help. Any attempt at operation seems inadvisable.

Revista de la Soc. Arg. de Biología, Buenos Aires

2: 359-405 (Sept.) 1926

*Blood Gases in Suprarenal Insufficiency. O. Pico Estrada and V. Deulofeu.—p. 359.
*Blood Volume in Suprarenal Insufficiency. O. Pico Estrada.—p. 367.
Guinea-Pig Filaria. J. M. de la Barrera.—p. 377.
*Action of Pituitary Preparations on Basal Metabolism. M. R. Castex and M. Schteingart.—p. 379.
*Action of Snake Venum. B. A. Houssay and P. Mazzocco.—p. 383.
*Idem. B. A. Houssay et al.—p. 392.

Blood Gases in Suprarenal Insufficiency.—Pico Estrada and Deulofeu report their experiments on dogs deprived of suprarenals. Oxygen saturation decreased in the venous blood, but not in the arterial blood. The oxygen capacity increased, but not regularly. Carbon dioxide decreased, especially in the arterial blood.

Blood Volume in Suprarenal Insufficiency.—After removal of the suprarenals, Pico Estrada found a decrease in the total blood and plasma volume in dogs. The organic dehydration accounts for the beneficial action of Ringer's solution. The action is similar in shock, but more pronounced in dehydration.

Action of Pituitary Extract on Basal Metabolism.—Castex and Schteingart's thirteen cases included individuals with exophthalmic goiter, acromegaly, hyperthyroidism, hypothyroidism, and two normal subjects. The injection of posterior pituitary extract caused a transitory rise in the basal metabolism, more pronounced in thyroid cases. The change varied from a drop of 3 in a case of feminism to an increase of 27 in one of diabetes. In two cases, long continued treatment with whole thyroid was without influence on metabolism.

Action of Snake Venom on Potassium, Phosphorus, Lactic Acid and Hemoglobin.—According to Houssay and Mazzocco's experiments, cobra venom causes an almost parallel discharge of hemoglobin and potassium from the blood cells of the dog, while the phosphate discharge is less regular. It also increases the elimination of potassium, and to a lesser degree of phosphorus, by several isolated organs of the dog, guinea-pig and frog, and liberates a certain amount of lactic acid. The diffusion of potassium is the best index of cell destruction.

Snake Venom and the Gases, Reaction and Salts of the Blood.—After injecting the venom of *Lachesis alternatus*, *Lachesis neuwiedii* and *Naja tripudians* in dogs, Houssay, Marenzi and Mazzocco found a decrease in red cells, hemoglobin and oxygen; marked increase in potassium and inorganic phosphorus in the plasma; a slightly increased p_H, and an early, transitory, slight lowering of the alkali reserve.

Sciencia Médica, Río de Janeiro

4: 513-563 (Oct. 31) 1926

*Dermatitis from Larvae. A. da Matta.—p. 513.
Phytotherapy in Dermatology and Pediatrics. A. da Matta.—p. 518.
Epidemiology of Yellow Fever. E. de Mattos.—p. 522.
Smallpox Vaccination. H. Maciel.—p. 539.
Forelegs in a Species of Fly. A. da Costa Lima.—p. 552.

Skin Lesions Caused by Caterpillar Larvae.—In the Amazon region the larvae of *Lepidoptera* often cause skin eruptions. In most cases these are very transitory contact irritations. The illustrations of da Matta's two patients show local lesions on the forehead and the arm due to the mere brushing against *Megalopyge* larvae in the woods.

Semana Médica, Buenos Aires

33: 1181-1248 (Nov. 4) 1926

Tracheobronchial Diphtheria. J. R. Paso.—p. 1181.
True Capillaries. E. P. Bertin.—p. 1193.
*Full-Term Pregnancy and Wertheim's Operation for Cancer. A. Peralta Ramos.—p. 1197.
"Sanocrysin" Does Not Prevent Complications of Tuberculosis. J. J. Viton et al.—p. 1200.
*Malarial Therapy in Progressive General Paralysis. G. Bosch and A. Mó. —p. 1204.
Sterility in Women: Tubal Insufflation. D. E. Centanaro.—p. 1210.
Renal Decapsulation in Acute Nephritis. A. C. Molina.—p. 1212.
Nervous Manifestations of Malaria. V. Dimitri.—p. 1215.
*Acriflavine as Exclusive Treatment in Gonorrhea. F. E. Grimaldi and R. de Surra Canard.—p. 1219.
Primary Endothelioma of the Diaphragmatic Pleura. J. W. Tobias.—p. 1221.
*Some Experiences with Intravenous Acridine Compounds in the Chemotherapy of Gonorrhea. G. A. Brandan.—p. 1228.
"Sanocrysin" in Advanced Pulmonary Tuberculosis. J. A. Alsina.—p. 1241.
Oleothorax Treatment of Spontaneous Pneumothorax. J. F. Mieres and A. Cetrángolo.—p. 1242.

Wertheim's Operation for Cervical Cancer Complicated by Pregnancy.—Peralta quotes two cases of cervical cancer, one in a primipara and the other in a quintipara, to demonstrate that Wertheim's method is made neither more difficult nor more dangerous by pregnancy. In one the use of radium arrested the course of the disease sufficiently to permit the pregnancy to reach full term. Intra-uterine death of the fetus forced the operation in this case. In the other, a live child was removed by cesarean section before the Wertheim operation.

Malarial Therapy in General Paralysis.—Bosch and Mó prefer to call their treatment mixed rather than malarial, as the results seem due in equal measure to the subsequent antisyphilitic medication and to the malaria. The inoculation, however, prepares the ground so that the drugs may act. Out of fifty unselected patients with general paralysis, treated since 1923, 48 per cent have returned to their former work or usual life, 14 per cent have improved, 18 per cent have not improved, 6 per cent have died (not as a result of inoculation), and in 14 per cent the malaria is still active. Improvement is chiefly mental. In some cases a second course succeeds,

after the first has been apparently unsuccessful. Both tertian and quartan forms were used for inoculation. Drug treatment must always be given afterward.

Acriflavine in Gonorrhea.—Ten new cases are added by Grimaldi and de Surra Canard to their previous series. The intravenous injection of various brands of acriflavine proved enough without other treatment to cure chronic gonorrhea which was of months, or years, standing. The treatment usually included about fifteen injections of 5 cc. each, although thirty-three were needed in one case. The strength was 2 per cent.

Idem.—Acriflavine was used by Brandan in the treatment of more than 200 cases of gonorrhea of all types, often complicated. All patients of whom he kept track either have been completely cured or have improved. In patients working in the open, exposed parts sometimes become discolored. Resorcin (0.25 Gm. a day) may prevent this.

33: 1249-1316 (Nov. 11) 1926

Cancer of the Uterus. A. J. Pavlovsky and V. Widakovich.—p. 1249.
Medicine as a Career. B. A. Houssay.—p. 1267.
Inflammation of the Verumontanum and Genital Disturbances. J. Salleras et al.—p. 1271.
Rational Therapy of Whooping Cough. E. Pietranera.—p. 1277.
*Treatment of Maxillary Sinus Inflammation. M. A. Torres.—p. 1283.
Home Care of the Insane. A. Raitzin.—p. 1293.
Castellani's Bronchial Spirochetosis. P. A. Luzuriaga and J. Bacigalupo. p. 1298.
Laënnec's Life and Work. G. Araoz Alfaro.—p. 1301.
Pathology in Laënnec's Works. J. Llambias.—p. 1304.

Treatment of Maxillary Sinusitis.—Torres describes with illustrations the burr and speculum which he has designed for maxillary sinus operations. He prefers the lower approach. With this method twenty-five out of twenty-seven patients were cured. The other two recovered after a Caldwell-Luck operation. In some the infection had been present for several years.

Siglo Médico, Madrid

73: 425-452 (Nov. 6) 1926

Malaria Treatment and the Prognosis of General Paralysis. A. Vallejo Nágera.—p. 425. (C'td.)
*Superior Vena Cava on the Left Side. D. J. de la Villa.—p. 429.
The Teaching of Legal Medicine in Europe. R. de Castro.—p. 433. (C'td.)
Chemical Pathology. V. Peset y Cervera.—p. 439. (C'td.)

Vena Cava on the Left Side.—The diagrams published by de la Villa show the course of the superior vena cava in a case in which it was located on the left side, next to the pulmonary artery, not the aorta. With this exception everything appeared normal; the arrangement of the large veins fitted in with the change on the left side. The irregularity was discovered in preparing a body for anatomic demonstration.

Deutsche medizinische Wochenschrift, Berlin

52: 1755-1798 (Oct. 15) 1926

Formation of Gallstones. L. Aschoff.—p. 1755. C'td.
Cholecystopathies. G. von Bergmann.—p. 1757. C'td.
*One-Sided Egg Diet. E. Friedberger.—p. 1760.
*Colitis Problem. L. Kuttner.—p. 1762.
Grave Colitis. Rosenheim.—p. 1764.
Benign and Malignant Tumors of the Pancreas. M. Einhorn.—p. 1765.
*Bactericidal Action of Duodenal Fluid. W. Löwenberg.—p. 1767.
Diagnosis and Treatment of Enteroptosis. F. W. Strauch.—p. 1769.
Treatment of Obesity. O. David.—p. 1772.
Dehydration in Treatment of Obesity. A. L. Molnár.—p. 1774.
*Provocation of Occult Bleeding. H. Kalisch.—p. 1776.
*Fever in Peptic Ulcers. J. Kroner.—p. 1777.
Traumatic Appendicitis. F. Brüning.—p. 1779.
Early Appearance of Hydrochloric Acid in Stomach. Z. Szilárd.—p. 1780.
Determination of Pepsin. H. Citron.—p. 1781.
*Diagnosis of Ascites. L. H. Kowitz.—p. 1782.
Technic of Blood Transfusion. A. Beck.—p. 1782.
Reply. Clairmont and Müller.—p. 1782.

One-Sided Egg Diet.—Friedberger continued his research on the differences in value of raw and cooked foods. Large amounts of cooked food are required to satisfy the hunger and promote the growth of animals. Much smaller amounts of the same food are sufficient, if it is given raw. He coins the term "Anschlagswert" (budget value) to express this new feature which, in addition to calories and vitamins, must be taken into account in diets. He found that cooking does not change the budget value of carbohydrates and fats. Proteins are influenced by cooking. He observed surprisingly rapid growth in rats fed on raw egg-yolk. A rat with an initial weight of 35 Gm. weighed 190 Gm. after thirty days and 250 Gm. after sixty days on this diet. Whole raw eggs for some time rivaled raw mixed diets in their effect. On the other hand, the whites of eggs—raw or cooked—proved poisonous; with one exception, the animals died within a day or two. This toxicity of egg-whites may account perhaps for some phenomena observed in rats fed with whole eggs: after from two to four months, these rats developed symptoms somewhat resembling avitaminosis. Cooked whole eggs differ in their action from other cooked food: with the latter the rats had no disturbances except retarded growth. With cooked whole eggs, the hair begins to be rough, and then disappears on the abdomen, later on head and back. At the same time, the weight declines. Stomatitis, conjunctivitis and keratomalacia develop. The rats tremble, are atactic and die after from one and one-half to two months of this diet. Instinct fails these animals completely: they always select the cooked egg when given the choice. The author thinks that man invented cooking partly because cooked food tastes better, partly because he can eat more of it than of raw food without feeling satiated. The invention of cooking parallels therefore the discovery of alcohol, tobacco and other poisons. More cooked food than raw food has to be consumed to satisfy. It is also possible that eating cooked food is harmful.

Colitis Problem.—Kuttner prefers the term "grave colitis" to "ulcerous colitis," because ulcers are not always found. It is still an open question whether grave colitis should be clinically separated from bacillary dysentery.

Bactericidal Action of Duodenal Fluid.—Löwenberg continued his studies. He concludes that the bacterial content of the duodenum depends chiefly on the bactericidal power of the duodenal fluid—and not on the presence of hydrochloric acid in the stomach. In sixteen out of twenty-five instances, colon bacilli and enterococci were not influenced by the duodenal fluid taken from patients with disease of the biliary passages. Since streptococci are killed by human bile, he believes that the alleged streptococcus infections of the biliary passages are in reality enterococcus infections. Bacteria—usually enterococci and colon bacilli—were found in the duodenum in all the seventy-nine cases of pernicious anemia that he examined. The bactericidal action of the duodenal fluid was nil in thirteen out of fifteen of these patients.

Provocation of Occult Bleeding.—Kalisch confirms to some extent the value of Boas' method. The hot applications on the abdomen provoked occult bleeding in some patients with peptic ulcers, although the feces gave a positive reaction also in a case of gastritis and another of cholelithiasis, where the presence of ulcers was improbable.

Fever in Peptic Ulcers.—Kroner observed moderate fever in eleven out of twenty-five patients with peptic ulcer.

Diagnosis of Ascites.—Kowitz asks the reclining patient to try to sit up without supporting himself by his hands. This effort is associated with an increased rigidity of the abdominal wall, and the wave of provoked fluctuation of the fluid is felt much better than on a flabby abdomen.

Klinische Wochenschrift, Berlin

5: 1905-1952 (Oct. 8) 1926

Clinical Psychiatry. O. Bumke.—p. 1905.
*Metabolism of Infants. H. Steudel.—p. 1908.
*Reaction of Irradiated Tissue. A. Liechti.—p. 1911.
*Dissemination of Tuberculosis. B. Lange.—p. 1913.
Roentgen-Ray Diagnosis of Duodenal Ulcer. W. Nölke.—p. 1915.
*Serotherapy of Syphilis. P. Mulzer.—p. 1920.
*Growth of Bacteria on Diabetic Blood. H. Hirsch-Kauffmann and A. Heimann-Trosien.—p. 1922.
*Precipitin Test for Abderhalden's Reaction. H. Loeschcke and H. Lehmann-Facius.—p. 1924.
"Individual Cell and General Treatment." W. Heubner.—p. 1926.
"Serodiagnosis of Syphilis on the Cadaver." E. Meinicke.—p. 1926.
*Glycosuria from Insulin. G. Fricke.—p. 1927.
Water Metabolism in Fever. W. Berger and O. Galehr.—p. 1928.
Subchronic Liver Atrophy. H. Kähler.—p. 1928.
Treatment of Pneumonia. A. Böttner.—p. 1930.
Opium and Morphine. Bijlsma.—p. 1934.
Optics of Gastroscopy. A. Hübner.—p. 1951.
*Bladder Lavage. K. Fuerst.—p. 1951.

Metabolism of Infants.—Steudel found that the nitrogen metabolism of infants is identical with that of adults. It was immaterial whether the infant is breast fed or fed with cow's milk. It is necessary, however, to correct the figures obtained, by considerations of the body weight and of the organs involved. For instance, the nuclein metabolism being related to the glands, the higher proportion of gland tissue (47.3 per cent of the body weight in infants as against 24.1 per cent in adults) has to be taken into account. The creatinine metabolism depends on muscles; therefore the relatively smaller mass of muscles in infants (23.5 per cent as against 41.8 per cent) should be considered in comparisons of this part of the metabolism.

Reaction of Irradiated Tissue.—Liechti determined electrometrically the hydrogen ion concentration in the subcutaneous tissue. Roentgen irradiation was followed within from two to three hours by increased local acidity, lasting for several days. He believes that this is due to an increase in the permeability of the physiologic membranes for ions, which pass from the cells into the tissue fluid. Nevertheless, it is possible that changes in adsorption of ions or of the proteins might account for it.

Dissemination of Tuberculosis.—Lange does not underestimate the danger of droplet infection, but concludes from his investigation that dust containing bacilli is the most frequent source of infection. Great danger arises when patients expectorate large amounts of bacilli. An economic campaign against tuberculosis should concentrate its energy on an attempt to make such patients innocuous to their surroundings.

Serotherapy of Syphilis.—Mulzer is skeptical as to the outlook for serotherapy of syphilis. He obtained from Jáuregui and Lancellotti the alleged curative llama serum. The failure—in animals as well as in three patients—was complete. Antibodies against spirochetes could not be detected in the serum. As was the case with several other authors, he was unable to infect a llama with syphilis.

Growth of Bacteria on Diabetic Blood.—Hirsch-Kauffmann and Heimann-Trosien observed a striking enhancement of the growth of various micro-organisms on blood from diabetic children, when the blood was taken while the patient was in a precomatose or comatose condition. In blood from patients in other stages of diabetes and from children dying from other diseases, this property was absent. Dextrose, ketone bodies or lipoids did not seem to account for the phenomenon.

Precipitin Test for Abderhalden's Reaction.—Loeschcke and Lehmann-Facius injected rabbits with extracts from rabbit's liver or kidney and found specific precipitins after a mixture of the extracts with serum had stood in the incubator for three hours. They report similar results in human cancer, except when associated with cachexia.

Glycosuria from Insulin.—Experimenting on dogs, Fricke administered by the stomach tube about 5 Gm. of cane sugar per kilogram of body weight. Glycosuria was not induced. When repeating the experiment after injection of 1 unit of insulin for 3 Gm. of sugar, he observed glycosuria of short duration in the second and third hours. He suggests the possibility that the pancreatic hormone participates in the mechanism of production of alimentary glycosuria, pregnancy glucosuria and renal diabetes.

Bladder Lavage.—Fuerst warns against lavage of the bladder with strong solutions of silver nitrate. She injected a 0.1 per cent solution in treatment of cystopyelitis in an infant. The therapeutic effect was nil, but a part of the mucous membrane became necrotic.

Medizinische Klinik, Berlin

22: 1551-1590 (Oct. 8) 1926

Hard Nodes in Breast. F. Pels Leusden.—p. 1551.
Conception of Acidosis. L. Lichtwitz and F. Mainzer.—p. 1554.
*Acetonuria Plus Glycosuria in Pregnancy. F. Adlersberg and O. Porges.—p. 1556.
*Problem of Catarrhal Jaundice. R. Bauer.—p. 1558.
Idiopathic Renal Colics. Grauhan.—p. 1561. C'td.
Pathogenesis of Obesity. E. Leschke.—p. 1563.
Toxic Psychosis After Ileus. T. Walzberg.—p. 1565.
*Early Diagnosis of Appendicitis. E. Flusser.—p. 1566.
Roentgen-Ray Diagnosis of Duodenal Ulcer. F. L. Bonn.—p. 1568.
Injury from Iodine Treatment. J. Bamberger.—p. 1569.
External and Internal Factors of Metabolism. E. Abderhalden.—p. 1571.
Pernicious Anemia, Gunshot Wound of Jaw and Parotid Fistula. C. Klieneberger.—p. 1574.
Heart Disease and Occupation. Von Schnizer.—p. 1575.
Cardiovascular Diseases. E. Edens.—p. 1576.
Teleology in Biology. T. Zahn.—p. 1588. C'td.

Acetonuria Plus Glycosuria in Pregnancy.—Adlersberg and Porges devised a combined test for alimentary acetonuria and glycosuria: After a preliminary period of a mixed diet containing, especially, sufficient amounts of carbohydrates, they give for one day a diet consisting of: meat, 200 Gm.; cheese, 50 Gm.; butter, 100 Gm.; from two to five eggs; black coffee; tea; bouillon, and green vegetables. The test is made the following day. The urine collected between 8 and 9 a. m. is tested for acetone (Legal's test). Then the subject takes 80 Gm. of white bread, 10 Gm. of cane sugar and tea. The urine is collected one and two hours later and examined for sugar. They made the test on thirty pregnant women and twenty-four controls. Acetone and some dextrose was found in the urine of all the pregnant women. Only two controls—both with exophthalmic goiter—had acetonuria. Three other controls had sugar in the urine.

Problem of Catarrhal Jaundice.—Bauer discusses the problem of catarrhal jaundice. He regards it as a manifestation of hepatitis.

Early Diagnosis of Appendicitis.—Flusser desires to popularize among laymen (and physicians) two warning symptoms in children: 1. A child who vomits without having diarrhea is not suffering from indigestion or from gastroenteritis, but from a serious disease (infection, meningitis, encephalitis or peritoneal irritation—usually appendicitis). 2. A child suffering from appendicitis usually asks to be put on the toilet, but is afraid to strain. As a rule, the child repeats the attempt after a while. Soon afterward, vomiting begins. He found appendicitis more frequently among children of well-to-do families. This he attributes to the prevalence of oxyuriasis among them, while poor children suffer more frequently from ascarides. Meteorism may be absent. Local reflex rigidity of muscles is about the only objective symptom which is practically constant. Transitory euphoria —especially if it follows perforation of the appendix—may mislead the diagnosis.

22: 1591-1630 (Oct. 15) 1926

Vitamins and Avitaminosis. A. Frank.—p. 1591.
Transillumination of Ethmoidal Labyrinth. Rhese.—p. 1596.
Roentgen-Ray Injuries Outside Irradiated Field. S. Schoenhof.—p. 1597.
Lime Plates in Aorta in Young People. W. Altschul.—p. 1599.
Poliomyelitic Facial Paralysis. W. Stern.—p. 1600.
Renal Colics of Unknown Cause. Grauhan.—p. 1601.
Weak Irradiation in Gynecology. C. Schoenhof.—p. 1604.
Changes in the Right Side of the Diaphragm. E. Reiser.—p. 1607.
*Treatment of Eczema. J. Sellei et al.—p. 1610.
Biology of the Gonococcus. F. Wolff.—p. 1610.
Recurrens Spirochetes and Arsphenamine. F. Johannessohn.—p. 1614.
Hysterical Pseudodementia. W. Brandis.—p. 1615.
Cancer and Its Treatment. O. Strauss.—p. 1616. C'td.
Teleology in Biology. T. Zahn.—p. 1628. C'cn.

Treatment of Eczema.—Sellei, Bársony and Liebner recommend daily intravenous injections of 10 cc. of a 10 per cent solution of sodium chloride in the treatment of eczema.

Monatsschrift für Kinderheilkunde, Leipzig

34: 1-85 (Oct.) 1926

*Serum Refraction in Erythrodermia. E. Schiff and W. Bayer.—p. 17.
Myatonia Congenita (Oppenheim). E. Stransky.—p. 24.
*Epidemiology of German Measles. Hasselmann-Kahlert.—p. 35.
Familial Endocarditis. W. Schaefer.—p. 45.
Lymphangitis in Pirquet's Reaction. L. E. Herzfeld.—p. 48.
Vaccine Encephalitis. I. Kollár.—p. 51.
Urinary Carbon in Metabolism of Infants. S. Éderer.—p. 54.

Serum Refraction in Erythrodermia.—Schiff and Bayer studied the refraction of the blood serum in twenty infants suffering from erythrodermia. The readings showed that the protein concentration was normal at the beginning of the disease, decreased at its peak, and slowly returned to normal when the condition improved. In fatal cases the subnormal values persisted. They state that the child is not out of danger while the refractometric values remain low, although the skin symptoms may have completely disappeared.

Epidemiology of German Measles.—Hasselmann-Kahlert describes twelve cases of german measles occurring in twenty children, ill with scarlet fever, occupying the same ward. The incubation time varied between eighteen and twenty days. In two children, angina and otitis media were responsible for a marked decrease of resistance to infection.

Münchener medizinische Wochenschrift, Munich

73: 1735-1776 (Oct. 15) 1926

*Treatment of Typhoid. H. Schottmüller.—p. 1735.
Glycogen and Gonorrhea. J. K. Mayr.—p. 1736.
Interfereometry in Pluriglandular Disease. F. M. Groedel and G. Hubert. —p. 1738.
Ephedrine in Asthma. H. Kämmerer and R. Dorrer.—p. 1739.
*Sachs-Georgi Reaction. T. Baumgärtel.—p. 1740.
*Conservative Treatment of Furuncles. T. Zechlin.—p. 1742.
*Milk from Syphilitic Mothers. Hackemann.—p. 1743.
Organotherapy in Gynecology. F. Binz.—p. 1744.
Hernias of Umbilical Cord. O. von Schroeder.—p. 1747.
A New Syringe. O. Hirsch-Tabor.—p. 1749.
Pericardium and the Circulation. G. Hauffe.—p. 1749. C'td.
Nephritis. C. R. Schlayer.—p. 1754.
Reduced Mortality of Men. R. Bandel.—p. 1758.

Treatment of Typhoid.—Schottmüller recommends blood transfusions from typhoid convalescents (not before the fourth or fifth week of convalescence) in treatment of typhoid. He believes that other infectious diseases also could be treated by this method.

Nonspecific Sachs-Georgi Flocculation in the Cold and Its Stabilization by Syphilitic Serum.—Baumgärtel found that, when kept at a certain temperature, almost every human serum flocculates with addition of the Sachs-Georgi antigen. Some serums require 0 C., other serums flocculate at 5 C., others at 15 C. These floccules disappear when the mixture is warmed above the temperature necessary for flocculation of the particular serum. Addition of a serum which flocculates at 37 C. stabilizes even the floccules of a serum which required 0 C. On the other hand, floccules which formed at 37 C., as is typical for syphilis, are dissolved when the temperature is raised to 40 C. The optimum temperature for the Sachs-Georgi reaction is exactly 37 C. Some syphilitic serums do not flocculate at higher temperatures, and nonsyphilitic serums flocculate below it. He prepared floccules by mixing normal serum with the Sachs-Georgi antigen and keeping it on ice for twenty-four hours. On adding the patient's serum to the centrifugalized floccules and heating the whole to 37 C., he obtained results which resembled to a large extent those obtained by the original test.

Conservative Treatment of Furuncles.—Zechlin was gratified by the results of local application of a thick layer of a 33 per cent mercurial ointment in furuncles and cellulitis. He believes that recovery is hastened when this treatment is combined with applications of a hot solution prepared by adding 1 tablespoonful of solution of aluminum acetate to 1 liter of water.

Milk from Syphilitic Mothers.—Hackemann attributes the positive Wassermann reaction that may be obtained with the milk in the first days after labor to the presence of serum globulin in the colostrum.

Zeitschrift für Urologie, Leipzig

20: 721-800 (1926)

Prostatography. E. Pflaumer.—p. 721.
"Development of Urology." O. Ringleb.—p. 728.
*Diagnosis of Polycystic Kidneys. C. H. Ludowigs.—p. 730.
Cystic Degeneration of the Testis. K. Werwath.—p. 737.

Diagnosis of Polycystic Kidneys.—Basing his opinion on roentgenograms of four cases, Ludowigs states that the most striking symptom of polycystic kidneys is lengthening of the calices, so that they resemble a spider. Hematuria is not always a decisive symptom.

Zentralblatt für Chirurgie, Leipzig

53: 2577-2640 (Oct. 9) 1926

Hernia Through the Transverse Mesocolon. H. Koch.—p. 2578.
Technic for Making a Substitute Stomach in Cases of Complete Gastrectomy. A. Balog.—p. 2581.
*Necrosing Panaritia of Chemical Origin. E. Glass.—p. 2583.
Bone Suture. A. Hagentorn.—p. 2586.
*Arterial Hemorrhage in Enterostomy. P. Sackur.—p. 2587.
Postoperative Parotitis. I. Silbermann and M. Kagan.—p. 2589.
"Moresin Plastic Operation for Contraction Scars Resulting from Burns." H. Stegemann.—p. 2591.
*Diagnostic Errors in Gastric and Duodenal Hemorrhage. J. Petermann. —p. 2591.

Necrosing Panaritia of Chemical Origin.—Glass reports the cases of two women, workers in velvet and plush, whose fingers became poisoned by chemical dyes. The fine, upstanding fibers of these materials had caused minute solutions of continuity on the fingers, through which the dye, the nature of which Glass was unable to ascertain, entered. The temperature was 38.5 C., and malaise and headache were present. The lesions did not suppurate, but there were small necrotic areas in the skin. A third case of chemical poisoning of the fingers occurred in a laundry-maid who pricked her right ring-finger with a pen dipped in ink used for marking linen. Three days later the finger swelled and the patient complained of pains in the right elbow. The temperature was 38.7 C., the pulse 84. The symptoms were headache, nausea and general malaise and weakness. A small area of necrosis developed at the site of the pen-prick. Soap-baths and dressings sufficed in the way of treatment. These cases resemble cases of indelible pencil poisoning, but radical surgery was not necessary since there was not, as happens in the latter cases, a deposit of an injurious chemical substance in the tissue, continually being dissolved and taken up by the lymph stream until its removal by surgical means.

Severe Arterial Hemorrhage on Establishing a Permanent Artificial Anus.—Recently Sackur had two experiences of hemorrhage when burning through the projecting intestinal loop with the thermocautery, toward the end of the second stage of this operation. To obviate this possibility, he advises, as an addition to the classic technic of suturing the intestine to the abdominal wall, that the mesentery be tied off with a mass ligature over an extent of from 2 to 3 cm., just beneath the greatest convexity of the delivered loop, and separated from the intestine at this site.

Diagnostic Errors in Severe Hemorrhages from Stomach and Duodenum.—Petermann reports five cases showing the necessity of thorough study of the blood picture before operation for assumed gastric or duodenal ulcer. A robust man, aged 46, had suffered for three years from symptoms pointing to ulcer of the duodenum. Hemorrhage had taken place a number of times during the past few months. The roentgenogram and chemical examination of the gastric contents were indicative of ulcer of the stomach, but operation failed to reveal anything pathologic in stomach or duodenum. Thereupon Talma's operation was performed, with the idea that cirrhosis of the liver might be at the base of the disturbances. Subsequent blood examination showed thrombopenia. A man, aged 56, had been treated for ulcer of the stomach for years. Severe hemorrhage led to a decision to operate. The night before the proposed operation, a renewal of the hemorrhage terminated the patient's life. At necropsy the lesion was discovered to be cirrhosis of the liver. Necropsy yielded the same result in a case with a similar history, which came to operation. Myelogic leukemia was the pathologic diagnosis in the case of a woman, aged 35, who died of gastric hemorrhage before a contemplated operation for ulcer. She had suffered for several months from attacks of pain in the upper abdomen, and the diagnosis had oscillated between cholecystitis or cholelithiasis on the one hand and gastric or duodenal ulcer on the other. The same symptoms were present for three years in a man, aged 40. Cholecystectomy had not relieved them. Loss of strength and black stools led to the diagnosis of bleeding ulcer or cancer. At operation periduodenitis and perigastritis were found. Assuming ulcer, the surgeon performed an extensive resection of the antrum and the upper part of the duodenum. The patient died in collapse fourteen days later. At necropsy pernicious anemia was found.

Zentralblätt für Gynäkologie, Leipzig

50: 2545-2608 (Oct. 2) 1926

Isolated Malformations of the Fallopian Tube. L. Kraul.—p. 2546.
Dick's Reaction in Obstetrics and Gynecology. H. Kleesattel.—p. 2550.
*Physiology of Rabbit's Tube. J. Bondi—p. 2554.
Ninhydrin Flocculation Test for Pregnancy. K. von Oettingen.—p. 2555.
*Finger Prints and Paternity. R. Scheffer.—p. 2559.
Foreign Body in Abdominal Cavity. L. Schmidt.—p. 2563.

Physiology of the Rabbit's Fallopian Tube.—Bondi confirms the fact, noted by von Mikulicz-Radecki, Lueg and Nahmmacher, that in the case of the rabbit relatively strong pressure must be present before fluid will pass from the uterus into the tube. If the uterus is ligated in any part, the portion next to the vagina remains unaltered, while the tubal portion becomes dilated. This result is not constant; it is likely to be absent in young or weak animals. Even after several months Bondi did not find that any secretion had entered the tube. Finally the glands atrophy, secretion stops and the uterine cyst ceases to grow. He explains the inability of the fluid to enter the tube by the fact that the latter pierces the muscle wall obliquely, so that gradual filling compresses the isthmic portion of the tube, closing the lumen.

Dactyloscopy and the Question of Paternity.—On the brick tablets of the royal library of Nineveh are marks which suggest that the science of finger-prints was understood in ancient Assyria, and it is known that finger-prints were used for identification in China in 700 A. D. In the thirteenth century the Chinese criminal police were making use of dactyloscopy. The Anglo-Indian government employed it seventy-five years ago, and it was introduced into Europe by way of England. At present there is a contradiction between the criminologic and the hereditobiologic points of view. The biologic proofs are insufficient to satisfy the demands of criminologic dactyloscopy. Bonnevie's recent system of registration, by which it was hoped by some that a step forward had been made in the application of finger-print study to questions of parentage, is not, in Scheffer's opinion, of practical value.

Vestnik Rentgenologii i Radiologii, Leningrad

4: 83-170, 1926

Influence of Roentgen Rays on Living Tissues. R. J. Gasul.—p. 83.
Roentgen-Ray Diagnosis of Congenital Heart Defects. Y. I. Arkusskiy.—p. 95.
*Shape and Chemism of Stomach in Exophthalmic Goiter. K. O. Glikina.—p. 139.
Roentgen-Ray Diagnosis of Tumors of the Lung. R. I. Meltser.—p. 113.
Significance of Pseudo-Epiphyses in Endocrinology. D. G. Rokhlin.—p. 125.
Roentgen Rays in Diagnosis of Spondylitis Deformans. S. A. Pokrovskiy. p. 139.
Radiotherapy of Malignant Tumors in Upper Respiratory Tract. Grosman and Kaplan.—p. 145.
*Roentgenotherapy of Kidney Diseases. E. A. Stern.—p. 155.
Image of Aorta in First Oblique Position. O. O. Den.—p. 161.
Pulsion Diverticulum of the Esophagus. J. I. Kovarskiy.—p. 163.

Roentgenologic Picture and Chemical Activity of Stomach in Exophthalmic Goiter.—In 46.3 per cent of twenty-six patients with exophthalmic goiter, hydrochloric acid was absent in the gastric juice. The vegetative tonus was abnormally low in twenty-three. On roentgen-ray visualization, the so-called Rieder's hook was found in all; hour-glass stomach in three. In nineteen there was downward displacement of the stomach. The gastric motility was increased in five of the patients with sympatheticotonia.

Roentgenotherapy of Nephrosis and Nephritis.—Stern applied roentgen rays in ten cases of acute or chronic disease of the kidney, after other measures, used for months, had failed. He gives the details of a case of subacute nephrosis and of a case of uremia from glomerulitis. In the first patient, one exposure of the right kidney was followed by reduction of albumin in the urine, disappearance of edema and headache, and considerable improvement in the general condition. After four exposures, two of the left kidney and two of the right, the albumin and casts disappeared completely from the urine. In seventeen months there was but one reappearance of albumin in the urine; this recurrence lasted for a few weeks. The condition continues to be good, although the woman does not keep to any diet. In the second case, the roentgen rays checked the uremic symptoms and enhanced the activity of the kidneys, improving the general condition. The method of treatment was as follows: first one kidney was exposed; a week later, the other. Then the procedure was repeated. From 2½ to 3 Holzknecht units were applied for from twelve to fifteen minutes at each exposure.

Acta Radiologica, Scandinavica

5: 385-474, 1926. (Partial Index.)

*Beta Rays and Biologic Effect of Roentgen Rays. A. Liechti.—p. 385.
Combination of Pneumoperitoneal Roentgenogram with Hystero-Salpingography. P. Jung and A. Schirmer.—p. 395.
*Activity of Human Heart. N. G. Stenström and N. Westermark.—p. 408.
*Action of Light on Oxygen Consumption. C. Sonne.—p. 419.

Importance of Beta Rays for the Biologic Effect of Roentgen Rays.—Liechti gives a summary of his previous work in regard to the effect of secondary rays from bright and colloid metals on prodigiosus bacilli, skin and testes of rabbits. The beta rays did not cause any increase in the dosage, but they were of decisive importance for the biologic effect of the roentgen rays, which probably must be considered as a membrane effect. The hydrogen ion concentration in the subcutaneous tissue fluid becomes increased after exposure to roentgen rays. Theoretically this agrees with the filter theory of Michaelis concerning the semipermeable membranes, according to which the cell permeability for cations is increased by a negative charge of the cell membranes.

Activity of Human Heart Recorded Simultaneously by the Roentgenogram and Electrocardiogram.—Stenström and Westermark compensated for the inductive disturbance in the string-galvanometer circuit, caused by the roentgen-ray machinery, by inducing in this an opposite induction current of the same period and strength. Following this principle, they succeeded in getting useful electrocardiograms during the roentgen-ray exposure. The movements of different points of the outline of the heart were photographed on a falling plate through a slit, usually two points at the same time, and then the curves were compared with electrocardiograms which were obtained simultaneously. The authors give a preliminary report of the results with this technic.

Action of Light on Oxygen Consumption.—Sonne found that radiated light energy, ranging from about 0.02 to about 1.00 gram calories a minute and for each square centimeter, had a marked, accelerating influence on the oxygen consumption of the chrysalids of the meal-worm. The effect was greater when a shorter wave-length was applied. There was an increase of oxygen consumption of about 40 per cent, on exposure for forty-five minutes to the unfiltered light of a Kromayer-lamp, of about 20 per cent with a glass filter, and of about 10 per cent when a glass filter and methylene blue filter were used. The yellow light had no influence on the respiratory metabolism. An increase in the oxygen consumption of about 15 per cent persisted for several hours after the irradiation, if unfiltered light had been used, but no after-effects were noted in the experiments with filtered light, in which the essential portion of the ultraviolet frequencies are eliminated.

Norsk Magazin for Lægevidenskaben, Christiania

87: 961-1048 (Nov.) 1926

*Recent Investigations on Vitamins. E. Poulsson.—p. 986.
*Diagnostic Importance of Diastase in the Urine. L. Kreyberg.—p. 992.

Recent Investigations on Vitamins.—Poulsson discusses the question of the reproductive dietary complex, vitamin E, and reports the case of a woman, aged 34, who gave birth to seven infants during a period of nine years. Only two of them were fully developed and living. Four of them were born dead from eight weeks to three days before term. On the mother's request, the pregnancy was interrupted in one case fourteen days before term. Life in the child was almost extinct, but it was possible to resuscitate it. Physical examination of the mother and anatomicopathologic examination of the stillborn infants did not reveal any abnormalities. In later pregnancies the mother was treated from the fourth month on with cod liver oil, and two healthy infants were delivered fully developed and at term.

Diagnostic Value of Diastase in the Urine.—Kreyberg employed Wohlgemuth's test for determination of diastase in the urine of 235 healthy persons. The normal index varied between 4 and 64. Acute diseases of the pancreas and salivary glands were usually accompanied by severe, acute, febrile abdominal diseases with moderate increase in the index. The rise was sudden and often of short duration.